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AN IMPROVED DISTILLATORY APPARATUS.

By Joseph P. Remington.

Read at the Pharmaceutical Meeting, April 15th.

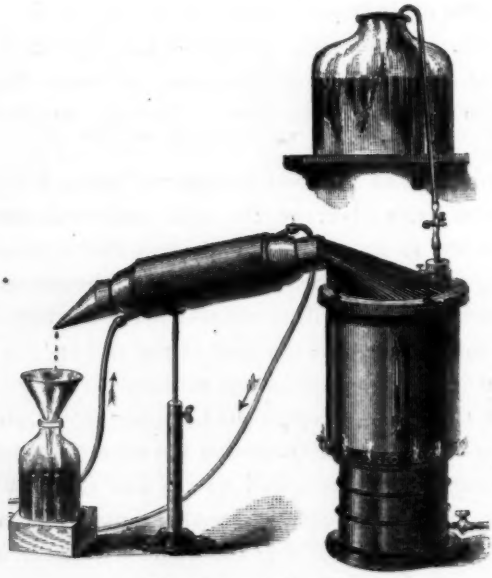
Since the distillatory apparatus described and figured in the January, 1878, number of this journal came into use, the writer has been somewhat occupied in devising improvements aiming to increase its efficiency.

Soon after it appeared and was introduced through a manufacturer, who took some pains to advertise the still and make them with some variation in size and styles, it became evident that a smaller apparatus, embodying the principles of the old form, would better serve the wants of most pharmacists who use distillation in many of their formulas. An effort was also made to reduce the cost of the still to the lowest possible sum without injuring its usefulness or durability.

The body of the still is of planished copper, holds about three and a-half gallons, is cylindrical in shape and has a double-thick copper bottom; a glass gauge-tube is arranged on the side to show the height of the liquid, or at least to indicate when the liquid is at a dangerously low point. The method of joining the dome with body is the same as that heretofore employed, *i. e.*, by tightly clamping the two brass rings together, a piece of wet twine having been placed between them.

The dome has been entirely altered, and instead of the opening to permit the escape of the vapor being in the middle it is at one side and shaped so as to afford as little condensing surface as possible, and is connected with the condenser by a ground joint, slightly tapered, which admits of the ready union with it, and by slightly twisting when the condenser is inserted, all danger of its coming apart is removed and the necessity of using any kind of lute is thus avoided. The condenser does not differ in principle from the one connected with the old apparatus, but its construction has been simplified and the proportions

altered somewhat so that its power is increased. It has seven straight tubes $\frac{7}{16}$th inch in diameter and twelve inches long, surrounded by a planished copper cylindrical case, to which brass ends are soldered. There is an opening in each of these ends, in which a short piece of copper tubing is soldered for admitting the supply of cold water at the lower tube by connection with rubber tubing with the water supply, either the hydrant or by syphoning from a bucket or other reservoir of water, placed on a shelf or box suitably elevated. The exit tube at the top carries off the water as it is warmed.



Pharmaceutical Still.

By arranging a syphon, joined to a piece of rubber tube, as shown in the cut, and this compressed with one of Squibb's screw pinch-cocks to adjust the flow of the liquid, it is possible to use this still for much larger quantities of fluids than three gallons (the contents of the body). In fact, twenty or thirty gallons, or an unlimited quantity, might be passed through this small still, and on account of the power of the condenser, distillation effected quite as rapidly as when stills four or five times the size are used ordinarily.

A gallon of alcohol may be recovered from weak percolate easily in forty minutes.

The still may be placed in any suitable vessel containing water employed in the laboratory where a water bath is to be used—or for small operations—the smaller dish accompanying the still may be placed between the two brass rings, and by disconnecting the rubber tubing at the top of the glass gauge-tube on the side, so as to permit the steam from the water bath to escape, distillation at low temperatures may be accomplished, and it is hardly necessary to add that the still body, with the shallow dish so arranged, may be used as an evaporator when distillation is not desired.

Philadelphia, March 1st, 1879.

NOTE ON MINIM PIPETTES.

By Charles W. Drew, Ph.B.

I notice in the last number of the "Journal" a paper from the pen of Dr. E. R. Squibb, in which he pointedly assails my right to describe the device which was figured and described by me in the March number of the "Journal," and within which he asserts that "these pipettes and the arrangement figured are by no means new or original" with me.

That the pipette was originated by me I never had any intention or desire to claim, and do not by any means claim in the paper to which he refers. Neither do I, nor did I, claim that I was the first to apply the principle of the syringe to any device for obviating the necessity of direct suction in their use. The use of the rubber nipple for filling the small minim pipettes and for facilitating its use as a dropper, I have been familiar with for some time—ever since it was brought to the notice of the Philadelphia College of Pharmacy by Dr. Squibb and Prof. Remington as described in this journal for 1878, p. 314. The device figured by me differs considerably, not in principle, but in construction and facility of adaptation to various sizes of pipettes, from that of the rubber nipple; and hence, I hold, is entitled to a separate description, and not at all included in the modification of Dr. Squibb.

The device figured by me I first made for my own convenience while assistant to Dr. Squibb, and it had been in use by me for some little time before I drew the attention of Dr. Squibb to the modification, which I

did, claiming that it was original with me and recommending it as an improvement in certain cases over any other which I had seen—the rubber nipple included. Subsequently to this the modification has been used somewhat in the laboratory of Dr. Squibb, and I doubt not in other similar establishments. So far as I know and believe, that of my manufacture was the first upon the model figured, and that my idea of the device originated either from any similarly constructed, or from Dr. Squibb, I cannot admit.

Having shown the device, as original, to several professional gentlemen, and being assured that it was to them new, I ventured to describe it in the "Journal." As far as I know the right to thus describe it was mine, though I cannot of course state that it may not, without my knowledge, have been previously employed. In that case I shall very cheerfully waive my present claim to its originality.

April 12, 1879.

ABOUT MAGNIFIERS.

By Hans M. Wilder.

Last month I called attention to a microscope which, although cheap, is really a good one. I have only to add that those wishing higher power than one hundred diameters may buy a quarter inch French achromatic triplet from any respectable optician at from three to five dollars; the milled heads of the instrument are large enough and the teeth of the rack are fine enough to permit easy focusing. The power will be increased to over two hundred.

In order to use a microscope to advantage, the objects have to be prepared, and this can most easily be done with the aid of a hand magnifier (what the Germans call "Loupe"). As it is tedious work, and sometimes impossible, to hold the magnifier in one hand while preparing with the other, a kind of stand is desirable which permits the free use of both hands and relieves the eye from the excessive strain of continually accommodating itself to the always changing focus.

I presume that in nearly every drug store is found a "note-detector" (one of those three-legged microscopes), an old prescription file with a heavy foot, and probably also a pocket-lens, whether single, doublet or triplet.

Take the prescription file (if provided with a hook, break that off) and sharpen the end to a point; get a sound, preferably velvet, cork of

about one inch or a little more in diameter by about as long or longer, push the file lengthwise through it, not through the centre but midways between it and the periphery; now get hold of a brass wire of about one-eighth of an inch thick and ten inches long, bend one end in a loop large enough to easily hold the body of the "three legs" but not wide enough to let it slip through; the other end is sharpened to a point. Pass the brass wire through the cork at right angle to the file and bend the sharp end in a right angle up. In order to strengthen the cork, slip two broad rubber bands over the ends, one above the wire and one below. The cork can now be slid along the file and the brass wire be shortened or lengthened without difficulty. Put the body of the "three legs" in the loop and the pocket-lens on the point (most of the new style pocket-lenses are provided with a hole somewhere through the handle). For use, push the cork down or up till the magnifier you use is focused on the object. The "detector" is easier to work with, owing to its large field, but as it seldom magnifies more than three diameters, recourse must sometimes be had to the pocket lens, the magnifying of which varies from five to about fifteen times, according to size and number of lenses. Further, get hold of two sewing needles, insert one head down into a wooden penholder, the other point down. The latter with the blunt end serves to keep the object steady, while with the first one the tearing and separating is done.

Easier still: find a crack in the table or counter, stick into it a match and having on the match the above-mentined pocket-magnifier. A match is generally about large enough to pass, with some friction, through the hole in the magnifier, so that the latter can easily be kept at any desired height above the table.

The above is nothing new, but only an improvement of a stand described in nearly all books on the use of the microscope.

TULLY'S POWDER.

NEW HAVEN, CT., April 9th, 1879.

Editor Journal of Pharmacy:

Noticing in your "Journal" for this month several formulas for Tully's Dover Powder, and having prepared it many years for Prof. Wm. Tully, for his own use and for his prescriptions, I herewith send the formula, which you will see agrees with neither of those published.

℞ Morphiæ sulph., ... gr. i
Cretæ Præperat., . .
Rad. glycyrrh. pulv., ...
Camphor pulv., ... ää 3i
M. ft. pulv.

This is the formula adopted by the Connecticut Pharmaceutical Association, any variation from which should have an affix of improved or an attachment of So-and-so's make.

In an acquaintance of fifteen to twenty years with Prof. Tully I never knew of his varying from this.

A. F. Wood, *Pharmacist.*

Hinsdale, Mass., April 8th, 1879.

Editor of the American Journal of Pharmacy:

Dear Sir—The formulæ of "Tully's Powder," as given in his (Tully's) "Materia Medica," Vol. 1, Part 2, page 1260, I quote:

"I then contrived a substitute for Dover's Powder, in ten grains of which there was one grain of opium and three grains of camphor, the remainder being a mixture of equal parts of the root of Glycyrrhiza glabra and prepared soft carbonate of calcium. The last two ingredients were added to prevent the other two from concreting into minute masses, to render the camphor less volatile, to cover the taste of the opium, and to give the whole such a bulk as would allow it to be divided into suitable doses for small children. After the salts of the oxide of morphinum became sufficiently common, I substituted a sixth of a grain of the sulphate for the grain of opium in this preparation, which now constitutes a far more eligible preparation than the old Dover's Powder."

The above being Prof. Tully's own language, consequently is authority for "Tully's Powder"; any variation from the above, of course, is not Tully's. In this section of the country we use:

℞ Morphia sulphate, ... part 1
Powd. camphor, ...
Powd. liquorice root, ...
English precipitated chalk, . . of each parts 20
M.

G. B. Plummer.

CHEMICAL NOTES.

By Prof. S. P. Sadtler.

Inorganic Chemistry.—E. Schering, the chemical manufacturer of Berlin, makes the following comments upon the manufacture of *potassium iodide:* The three methods in actual use are: (1) Decomposition of barium iodide (obtained from barium sulphide and iodine) with potassium sulphate. (2) Introduction of iodine into caustic potassa; evaporation to dryness and fusion with carbon in order to reduce iodate. (3) Decomposition of ferroso-ferric iodide with potassium carbonate. Satisfactory results can be obtained by any of these methods, and the choice must be determined by local considerations.

In method No. 1, the preparation of a barium sulphide of high and regular strength is not unattended with nuisance, and the lixiviation of the barium sulphate requires much time. On the other hand, potassium sulphate can be obtained cheaper and purer than the corresponding carbonate, whilst the barium sulphate can be readily utilized for the reproduction of sulphide.

Method No. 2 obviates the necessity for washing a precipitate, and yields at once a very strong solution of potassium iodide; but the preparation of pure caustic potassa, and the concentration and subsequent fusion are circumstantial and tedious. The author therefore prefers the third method, as ferroso-ferric iodide is easily prepared, and the carbonate of iron is readily washed.

To obtain cubic crystals of a porcelain-like appearance it is essential, in the first method, to ensure the complete decomposition of the barium sulphide by the iodine; if alkaline sulphides are mixed with the potassium iodide the crystals are paltry. If the lye contains iron sulphide, which is soluble in hot and concentrated potassium iodide, the crystals take a blue appearance. An excess of iodine dissolves foreign metals present in the barium sulphide, and the crystals may then be discolored. In the case of the second method, irregularity in melting may produce iodic acid, and a caustic potassa not free from sulphates causes the presence in the lye of alkaline sulphide. Both these injurious impurities must be removed prior to crystallizing.

In the third method these annoyances are excluded. Salts of sodium must in all cases be avoided. Some manufacturers, to avoid the presence of sulphides, leave purposely a trace of iodate in the lye. The result is that the crystals turn yellow. The presence of lead in the

iodine is exceedingly objectionable. This metal is soluble in concentrated potassium iodate, and cannot be precipitated by sulphuretted hydrogen, except after great dilution. If not removed, lead affects not merely the color, but the forms of the crystals.

No demonstrable trace of potassium carbonate is admissible, either for medical or photographic purposes. Potassium iodide, therefore, should be unaffected by salts of barium. The perfect absence of chlorine can never be attained, as even the best sample of iodine, as well as of potassium carbonate, contains traces of this impurity.

Chilian iodine, obtained from soda-saltpetre, is becoming a formidable rival to the European product, which cannot be offered at a reduced figure, as the manufacturers have lost their market for potassium chloride in consequence of the rivalry of the Stassfurt mines. Chilian iodine is met with in commerce either as a paste or as copper iodide.—*Chemical News*, March 21, 1879, from *Chemische Industrie*.

Although much study has been given to the action of chlorine upon calcium-hydrate, very little attention has been paid to the action of *chlorine* upon *barium* or *strontium hydrate*. J. Konigel-Weisberg has studied this action in the case of barium hydrate, and gives the following as his results:

1. Barium hydrate, BaO_2H_2, does not absorb chlorine. This absorption depends upon the presence of an excess of water; the more water the more chlorine absorbed, and this continues until all, or nearly all, the barium oxide contained in the substance is saturated with chlorine, reckoning two atoms of chlorine to one molecule of BaO.

2. By the action of chlorine is formed most probably a hypochlorite along with the chloride, but the barium hypochlorite decomposes at once into a chlorate and chloride, so that in the product finally obtained very small amounts only of hypochlorites can be found, while almost the entire chlorine percentage is present in the form of chloride and chlorate. The reaction can therefore be expressed in the way usual for the action of chlorine upon the alkalies: $6BaO + 12Cl = 5BaCl_2 + Ba(ClO_3)_2$.—*Berichte der Chem. Gesells.*, xii, p. 346.

Following upon the method suggested by J. W. Brühl (this journal, p. 188, 1879) for the *purification of mercury*, we have another by Lothar Meyer, which he claims involves less loss of mercury. It is to allow the impure mercury to fall in a fine stream into a tall tube containing a moderately dilute solution of commercial ferric chloride. The lower

end of this tube dips into a glass jar provided with a side tubulure for the escape of the purified mercury. The dimensions of this jar must be such that the mercury standing in it shall counterbalance the higher column of ferric chloride solution in the inner narrow tube. The mercury flows out of the side tubulure of the wider jar purified and dry. A single repetition of the treatment may be necessary if the mercury was very impure.—*Berichte der Chem. Gesells.*, xii, p. 437.

Organic Chemistry.—A French chemist, Forcraud, who with the aid of silver-ultramarine had already prepared the ultramarines of different metals, has succeeded in preparing *organic ultramarines* containing the alcohol radicles in the place of the silver. Ethyl-ultramarine thus prepared forms a gray powder, which when heated decomposes readily with evolution of ethyl-sulphide, and which when heated with chloride of sodium changes into the ordinary blue ultramarine.—*Berichte der Chem. Gesells.*, xii, p. 376, from *Comptes Rendus.*

Chinolin, C_9H_7N, is an artificial alkaloid prepared by the destructive distillation of quinia, cinchonia with potassium hydrate. Its synthesis has just been effected by W. Koenigs, thus bringing us a step nearer that future possibility, the artificial production of the cinchona alkaloids. Allyl anilin is passed over oxide of lead, which has been heated to a faint red glow. An oily distillate is thus obtained, possessing the odor of benzonitrile. This is treated with dilute sulphuric acid and filtered from difficultly soluble anilin salts, shaken up with ether, and treated with solution of potassium bichromate and sulphuric acid until no further change takes place. The filtrate is made alkaline and distilled in a current of steam, when the chinolin comes over with the first drops of water.—*Berichte der Chem. Gesells.*, xii, p. 453.

H. Weidel has studied the oxydation products of *berberina*, and describes an acid formed by the action of nitric acid upon the alkaloid, which acid he calls *berberonic acid.* It is obtained in the form of hard, nearly colorless prisms, of a glassy lustre, difficultly soluble in cold, easily soluble in hot water. Analyses of the purified crystals dried at 110°C. yield results corresponding to the formula $C_8H_5NO_6$; dried in the air, the crystals contain two molecules of water of crystallization. A characteristic reaction for berberonic acid is the deep red color, with a slight blueish shade, that its aqueous solutions show on the addition of sulphate of iron. This reaction, however, is shared by oxycinchomeronic and pyridendicarbonic acids. If the lime salt of berberonic acid

be submitted to dry distillation with an excess of caustic lime, strongly alkaline fumes, possessing the peculiar odor of Dippel's oil, are produced. The distillate on rectification gave a product possessing all the properties of pyridin, and on analysis it proved to be this base. The reaction appears to be $C_8H_5NO_6$ (berberonic acid) $=3CO_2+C_5H_5N$ (pyridin). The author proposes to follow up this work by a study of the pyridin bases which result so constantly from the decomposition of the alkaloids.—*Berichte der Chem. Gesells.*, xii, p. 410.

Two English chemists, J. J. Dobbie and W. Ramsey, have been studying the decomposition products of *quinia* and the accompanying alkaloids, and have gotten results very analogous to those of Weidel just mentioned. Quinidia, cinchonia and cinchonidia yield, on oxidation, with potassium permanganate, acids which appear identical in all respects, and on analysis prove to be *tricarbopyridinic acid*, $C_8H_5NO_6+1\frac{1}{2}H_2O$. The authors conclude that the cinchona alkaloids bear a very close relation to the pyridin bases.—*Ber. der Chem. Gesells.*, xii, p. 392.

The composition of the milk from the *brosimum galactodendron* has been investigated by Boussingault ("Comptes Rend.," 86, p. 277). The juice obtained from incisions in the bark of *brosimum galactodendron*, a tree growing in Venezuela, contains, like animal milk, a fatty substance, a saccharine body, casein, albumin and phosphates. The fatty body resembles very much beeswax, fuses at 50°C., is partly saponifiable, easily soluble in ether, but difficultly soluble in alcohol. The percentage composition of the milk is very varying.—*Berichte der Chem. Gesells.*, xii, p. 374.

APOCYNUM CANNABINUM,[1] PRECIPITATE from TINCTURE AND FLUID EXTRACT.

By J. U Lloyd.

The root of this plant yields a very bitter tincture or fluid extract, darker colored when made from the dry than fresh, whether the menstruum be alcohol or mixtures of alcohol and water. When a tincture or fluid extract of this root is permitted to remain quietly a white sub-

[1] It is the current impression that the Apocynum root of commerce (bitter-root, common name) is A. androsæmifolium. This I find generally incorrect as applied to the drug furnished from Cincinnati, although both species may be gathered promiscuously where A. androsæmifolium abounds, which is not the case in this section, although said to be local to some places near. During the last season, I compelled

stance separates, and is deposited upon the bottom of the vessel, and that portion exposed to light as the bottle ordinarily stands upon the shelf. This peculiar appearing substance attracted my attention a few years ago, and thus led to a more careful investigation, and the phenomena accompanying its formation in a series of experiments upon Apocynum cannabinum carried on during the preceding six months (Oct., 1878, inclusive, to April, 1879).

The precipitate formed fastest during cold weather, and I obtained the substance in considerable amount. It appears in little aggregations which increase regularly, each radiating from a central point, appearing like aggregations of minute crystals until close examination shows them to be destitute of any crystalline form. I can compare them to the warty aggregations which deposit from tinctures of other plants, apparently systematically formed, and yet devoid of mathematical structure. Tincture of the fungus *white agaric* (made with alcohol) is particularly prone to deposit a yellow resinous sediment, of formation like that from Apocynum cannabinum, depositing itself upon the part of the bottle ordinarily exposed to light, and upon the bottom.

Upon close examination, interspersed throughout the afore-mentioned white substance, I found numbers of transparent crystals, some obtained from a 10-gallon keg being quite large. These belonged undoubtedly to the monoclinic system, and were simple crystals ($OP, \infty P, \infty P \infty$).[1] When purified from adhering impurities they dissolve freely in water, are insoluble in chloroform and ether, almost insoluble in cold alcohol and slightly in hot; cold sulphuric acid chars them upon standing and is colored dark red. Fehling's solution retains its blue color when boiled with a crystal, and there is no red precipitate. They are very sweet, and the foregoing, in connection with crystalline form and other tests, convince me they are cane sugar.

The associated white precipitate dissolves freely in chloroform, therefore to purify it from sugar and foreign matters the dried precipitate was

the diggers to bring specimens of the herb, and in all instances A. can. was furnished. My brother was compelled to supply his herbarium with A. androsæmifolium from abroad. Recently, by request, I sent Mr. Chas. Mohr, of Mobile, Ala., some specimens, and selected them promiscuously from 2,000 pounds in our ware-rooms. Mr. Mohr afterward wrote that undoubtedly they were A. cannabinum.

[1] Egleston's Diagrams, plate xxxii, fig. 11, and Roscoe and Schorlemmer "Treatise on Chemistry," vol. i, p. 736, fig. 333.

dissolved in chloroform, filtered and the filtrate evaporated to dryness. The residuum was dissolved in boiling alcohol, and the solution poured into ice cold water with constant stirring, whereby the material was obtained in the form of a light porous body, which readily dried when exposed to the atmosphere.

Thus we find a white, tasteless inodorous powder, insoluble in water, but freely soluble in carbon disulphide, benzin, chloroform and sulphuric ether; soluble in hot alcohol, slightly in cold; glacial acetic acid dissolves it to an extent; hydrochloric acid changes it after some hours to a grey color; sulphuric acid dissolves it with decomposition and effervescense, the solution being of a dark brown color, with that peculiar greenish fluorescent hue possessed by crude petroleum, which to appearances it nearly resembled. When the foregoing was mixed with water, a black oleaginous substance with the odor of coal tar appeared upon the surface, the underlaying liquid having a rose tint.

Cold nitric acid appears not to affect it, but in time the acid turns yellow, as does the material which liquefies. When boiled in contact with nitric acid decomposition ensues, and nitric oxide is copiously generated. The liquid turns yellow and dissolves the larger part of the organic matter present. Water added to this solution causes a flocculent precipitate, white when recent, yellow when washed and dried.

If any wish to investigate the matter, I will furnish by mail a sufficient amount of the precipitate I have purified. The subject may be of interest to such as are studying the elementary constituents of vegatable principles. This article is interesting to pharmacists, inasmuch as the precipitate may make trouble by separating from tinctures. Worthless materials are only a burden to fluid extracts, and sometimes we wonder if a precipitate is valuable. In this instance I feel that the material can be safely separated, as both the white resinous or waxy substance and the sugar are valueless. Tinctures from which both articles have been separated give with physicians the best of satisfaction, while in case of the deposition of peculiar white matter within a bottle after its reception by the consumer distrust is natural.

It was mentioned that the deposition of matter occurred upon those portions of the bottles that were exposed to the light, and upon the bottom. The entire front part of the bottles, as they naturally stood upon the shelves, was covered with a considerable layer of matter, while the portion behind was free from precipitate.

This lead me to experiment upon the subject, although it certainly seemed natural to accept without question a general conclusion. I believe in similar cases that light influences the change.

The experiments instituted for the purpose of testing the accuracy of the light hypothesis contradict it most positively. In similar investigations with other substances, I have been compelled to admit that light has little if any influence. So with this; the light as a coincidence only happens to strike upon the portion of the vessel where, under natural laws which govern the deposition of this substance, the precipitate will form.

This article is not intended as an argument upon Nature's laws and the phenomena which accompany, however interesting they may be; therefore, I will not consume time with the experiments.

Cincinnati, Ohio, April 15th, 1879.

POISONOUS SPECIES OF ASTRAGALUS.

By John M. Maisch.

The April number of the "Pacific Medical and Surgical Journal" contains a paper by D. H. Gibbons, Sr., on the "Poisonous Effects of Crotalaria—vulgo Rattle Weed, Loco Weed"—in which the effects of the plant on horses and sheep are described. These are indicated to some extent by the name (*loco weed*) given to the plant by the native population, the term loco indicating insanity or madness. The plant in question is described as follows:

"The plant grows abundantly in almost all parts of California, and may be easily distinguished by its bunches of inflated seed vessels, each of which is an oval bladder about an inch in length, or about the size of a chestnut. The seeds occupy but a small portion of the bladder, and when the clusters are trodden on there is quite an explosion. The plant mostly has flowers and full-grown seed-pods at the same time, and continues in bloom from spring to autumn. It grows from one to three feet high, and is commonly much branched from the root. The flowers are white, or greenish-white, and in long, erect racemes. The leaves are pinnate and rather handsome."

The botanical name of the plant is not given, but since the description of the seed vessels corresponds with the general appearance of the inflated legumes of the genus *Crotalaria*, it was at first supposed that

the California rattle weed might probably belong to it. Of this genus, DeCandolle's Prodromus enumerates 130 species, which are chiefly found in the tropical and subtropical regions of both the eastern and western hemispheres. Several East Indian species, like *Crotalaria quinquefolia*, *retusa*, *verrucosa*, Lin., and others are reported as possessing emetic properties, the bitter tasting leaves being usually employed. One species, *Crotalaria sagittalis*, Lin., is found in barren sandy soil throughout the greater part of the United States from the Atlantic to the Mississippi; and two other somewhat larger species, *C. ovalis*, Pursh, and *C. Purshii*, D.C., grow in similar localities from North and South Carolina to Florida. All three are commonly known as *rattle-box*, and appear to be confined to the North American continent; at least neither of them is mentioned among the 15 species which Grisebach enumerates as being indigenous and naturalized in the British West Indian Islands. Several species of Crotalaria are natives of Mexico, but none is found in California. The *rattle-weed* of that State belongs to the genus Astragalus, of which Prof. A. Gray says that in California the species have the reputation of being poisonous to sheep, which would be most unexpected were it not that several Papilionaceæ of Australia are known to be so.

Astragalus crotalariæ, *Gray*.—This is most likely Dr. Gibbons' plant, and is described in the "Botany of California," vol. i., p. 149, as follows: "Glabrous or slightly pubescent, or the young parts sometimes villous; stems erect or nearly so, two or three feet high, usually stout; leaflets from oblong-linear to obovate oval, or slightly obcordate, thickish (from a quarter to a full inch long); stipules triangular and distinct; calyx-teeth subulate, about half the length of the short campanulate tube; corolla white; pod of rather parchment-like texture, but much inflated, ovoid, an inch to an inch and a half in length. *Var. Virgatus*, Gray.—Stipules more subulate, racemes virgate and loose, four to ten inches long; calyx-teeth subulate-setaceous and longer. Hills and plains from around San Francisco Bay to Santa Barbara, Cal., the variety about San Francisco Bay."

It belongs to the sub-genus *Phaca* which has a one-celled pod, and to the section *inflati* the legume being inflated.

Astragalus mollissimus, *Torr.*—Through the kindness of Dr.

Wm. Neergaard, of New York, I obtained some time ago the root, leaves and seed pods of a plant from the Indian Territory, in regard to which the following information was given: "The plant is among the first to make its appearance in the spring, and is anxiously sought after by the Indian ponies and horses. They will dig into the earth for it, and after eating it they become intoxicated and excited and seek water, which they drink with avidity, when they begin to swell, soon fall over and rarely live to get away from the water, not being able after they have drunk to rise to their feet again." Although the specimen had suffered much while passing through the mail, and flowers had not been sent, it could be referred to the natural order of Leguminosæ, and by the peculiar legume was traced to the genus Astragalus.

The Proceedings of the American Academy of Arts and Sciences, vol. vi, contain an excellent paper, by Professor Asa Gray, entitled "A revision and arrangement (mainly by the fruit) of the North American species of Astragalus and Oxytropis," in which he unites the genus Phaca as a subgenus or division of Astragalus, describing altogether 108 species, 56 of which belong to the former and 52 to Astragalus proper, which is characterized by the partly or completely two-celled legume, resulting from a septum and the inflexion of one or both sutures. Of the 16 sections of the last mentioned division, the plant in question belongs to section 4, *mollissimi*, and is thus characterized by Gray[1]: "Legume cartilaginous or coriaceous, sessile, oblong, turgid, not compressed, more or less sulcate at both sutures, by the perfect septum two-celled, at length incurved. With a perennial caudex, subacaulescent, glossy, with a soft, silky, often yellow, pubescence; peduncles scape-like, long; spikes dense; flowers rather large, violet; calyx tubular."

The plant has lanceolate stipules cohering below the petiole, and leaves with 11 to 14 pairs of ovate-oblong or oval, obtuse but slightly mucronate leaflets; its pods are about one-half inch long and smooth. It is widely distributed west of the Mississippi, and has been found from Nebraska to Western Texas; it is rare in Colorado, and is not mentioned as occurring in California.

[1]Legumen cartilagineum vel coriaceum, estipitatum, oblongum, turgidum, nec compressum nec obcompressum, ad suturas utrasque pl. m. sulcatum, septo perfecto bilocellatum, demum incurvum. E caudice perenni subacaules, villo sericeo molli (saepius fulvo vel aurato) splendentes; pedunculis scapiformibus elongatis. Spicæ densifloræ. Flores inter majores, violacei; calyce tubuloso.

The order of leguminosæ, which contains a very large number of plants, indigenous to all parts of the world, yields many edible and other useful products; but that some leguminous plants, like *Citysus laburnum*, Lin., *Tephrosia toxicaria*, Pers., *Piscidia erythrina*, Jacq., and others, possess more or less poisonous properties has been known for a long time. More recently *Physostigma venenosum*, Balf., *Sophora speciosa*, Benth., and others, have been added to the list. But the genus Astragalus, although a very extensive one, and comprising several hundred species, appears to have attracted very little attention for medicinal use. The product of the shrubby astragali of the Levant, gum tragacanth, is universally known and employed. *Astr. glycyphyllos*, Lin., of Europe and Northern Asia, the leaves of which have a rather unpleasant sweet taste, formerly enjoyed some reputation as a diuretic. *Ast. exscapus*, Lin., a native of Central Europe, has a mucilaginous, mildly astringent and somewhat bitter root, which was formerly employed in syphilitic complaints. The seeds of *Ast. baeticus*, Lin., which is found in Southern and Middle Europe, have been to some extent used as a substitute for coffee; they were examined by Trommsdorff (1824) and the root of the preceding species by Fleurot (1833); but in both cases only the common constituents of vegetables were found.

There are about 12 species of Astragalus found in the United States east of the Mississippi, and 100 or more westward to the Pacific coast. The eastern species are popularly known as *milkvetch*, and as far as I could ascertain are nowhere employed for medicinal or domestic purposes; and since not a single species is enumerated in the interesting paper by Dr. E. Palmer ("Am Jour. Phar.," 1878, p. 539) as being used by the Indians, it is to be presumed that no use has been found for the western astragali. From the accounts given above, however, it would seem that they deserve attention, at least so far as very active and even deleterious effects have been noticed from a few species of a large genus, which seems to produce mostly plants of little or no importance in a medicinal point of view.

ARALIA PAPYRIFERA, Hooker.

PHILADELPHIA, April 14th, 1879.

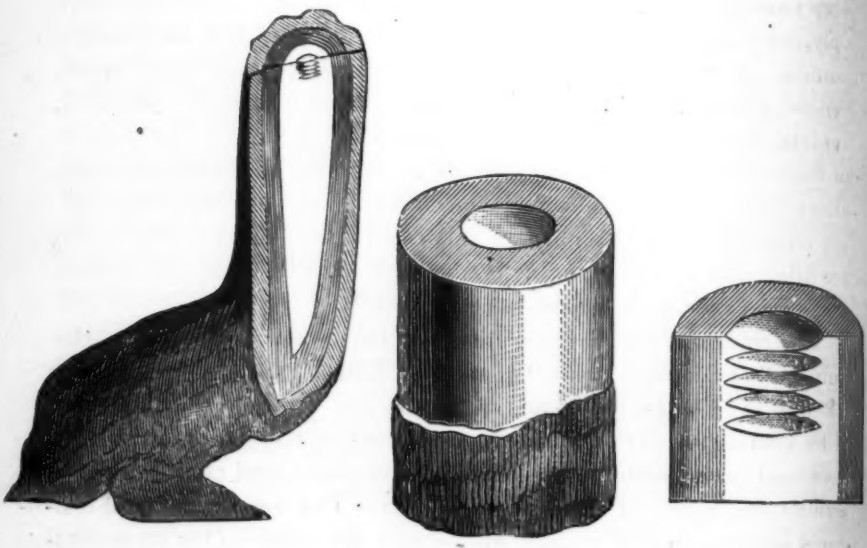
Editor American Journal of Pharmacy.

In the article on Aralia, by Thomas Moore, in the "Treasury of Botany," is the following account of the rice paper plant: "The rice paper plant of China has been referred to this genus by Sir W. J. Hooker, under the name of A. papyrifera. This plant grows in the deep swampy forests of the Island of Formosa, and apparently there only, forming a small tree, branching in the upper part, the younger portions of the stem, together with the leaves, covered with copious yellow down. The full-grown leaves are sometimes a foot long, cordate, five to seven-lobed, of a soft and flaccid texture. The panicles of flowers come from the extremeties of the stem and branches, rising above them, and then becoming pendulous, one to three feet long, bearing numerous capitate umbels of small greenish flowers. The stems are filled with pith of very fine texture, and white as snow, which when cut, forms the article known as rice paper."

The results of the investigations of Dr. Hooker, in regard to this subject, are recorded in his "Journal of Botany" in the volumes for 1850, p. 27; 1852, pp. 50 and 347; 1853, p. 79, and 1855, p. 280. The volume for 1852 contains a plate giving representations of the leaf, root and stem, with the cylinders of pith entire, and cut vertically to exhibit the septa. The writer states that "The root is thick and fusiform, slightly divided, equally woody with the stem. Our representation of that is taken from the lower part of a dead plant, cut through transversely and vertically. Our larger stems exhibit the same characters. A section exhibits a moderately thick bark, a thicker circle of pale wood; within, the tube is occupied by the white pith descending to the root. In the thicker stems the pith readily separates from the wood, with a rather rusty colored furrowed coat, which seems to take this character from so many ridges on the inside of the wood. Among our numerous samples of the pith, freed from the external coating, and cut into perfect cylinders, some are uniform or solid, while others are furnished with cavities, divided into compartments by entire or more or less ragged septa. The comparatively high cost of the large sheets proves that the pith does not in general attain a great diameter. The largest specimens of the pith sent to the Kew Museum measured twenty-

six inches in length, and the thickest was rather more than six inches in girth."

Up to 1855 none of the living plants that had been sent to the Kew Museum had borne flowers, and the description of these was derived from plants under cultivation in the Governor's garden at Hong Kong.



ARALIA PAPYRIFERA.
Root and part of stem, cut vertically; pith, entire. and cut vertically.

By comparing the accompanying specimens of the pith, which I procured in Formosa in 1868, with the copy of this part of the plant, taken from "Hooker's Journal,"[1] it will be evident that they were really derived from the plant described by Hooker. The smaller one is still covered by the corrugated envelope referred to above, while the larger one has been deprived of this covering and cut into the cylindrical form, in which shape it appears to be always sent to the artists who cut it into sheets. As the largest cylinders have a diameter of more than two inches, and as some of them are solid, it will be seen that sheets even

[1] The above figures have been reduced to one-half the original size.

larger than those in the accompanying book could be made from this pith.[2]

The pith of the *Aeschynomene paludosa* (*aspera*), which somewhat resembles that of the *Aralia papyrifera*, is used in the East Indies for making floats, light hats, etc.; and still another plant, the *Scævola taccada*, which furnishes a pith having an almost identical appearance, even under the microscope, with the rice paper pith, is also employed in the Malay Archipelago, for making artificial flowers and small figures. It is distinguished, however, from the A. papyrifera by the smaller size of its cylinders, which never exceed $\frac{7}{10}$ of an inch in diameter, and also by the fact that the cylinder of pith becomes more slender as the stem ages and thickens.

Very truly yours,

F. V. Greene, M.D.

INSECT POWDER.

By William Saunders.

Reprint from the Canadian Entomologist, March. Communicated by the author.

The insect powders of commerce are the powdered flowers of different species of *Pyrethrum*. Those of *Pyrethrum carneum* and *roseum* were introduced some thirty years ago under the name of Persian Insect Powder, and subsequently those of *Pyrethrum cinerariæfolium*, a native of Dalmatia, Austria, as Dalmatian Insect Powder. Both the Persian and Dalmatian powders are good insecticides, but the latter is much the more energetic in its action and hence commands a higher price; indeed, it is so much preferred that it is gradually driving the so-called Persian powder out of the market. The fact of the flowers of *P. roseum* being less active than those of *P. cinerariæfolium*, has been accounted for on the ground that the single flowers are much more powerful than the double ones, and that the double flowers occur in *P. roseum* in much larger proportion than in the other species. The flowers, either whole or powdered, preserve their activity for a long period. A recent European experimenter states that he could not perceive any particular loss of activity in samples which had been kept for six years. The fresh (undried) flowers act very slowly as compared with the same dried and powdered, and the plant itself powdered is quite inactive. It

[2] It is stated that the parings of the pith, or perhaps of the root, are employed in China, in the form of infusion, for their supposed diuretic properties.

is singular that while there are many other composite plants closely related to the genus *Pyrethrum*, as yet this peculiar property has been found only in plants belonging to this genus, and even within this limit there are several species whose value as insecticides is very slight. A large number of *Compositæ* indigenous to Austria have been tested and found to be of no value in this respect. The flowers of Tansy (*Tanacetum vulgare*) are said to have a slight stupefying effect.

The *Pyrethrums* are hardy plants which bloom abundantly the second year from seed. The powder is prepared from the half-opened flowers gathered during dry weather and dried in the shade under cover, but the process of gathering, drying and preparing involves so much time that their culture can only be made profitable where labor is cheap.

Insect powders have not attracted general attention as insecticides until within the last three or four years, during which time they have been introduced in various forms in packages and boxes, accompanied by suitable blowers or insect guns for the purpose of properly distributing the powder, and recommended for the destruction of flies, cockroaches, fleas, bugs, etc. Sometimes these prepared articles have been artificially colored so as to disguise their source, but all have owed their activity solely to the presence of the powdered flowers of one or other of these *Pyrethrums*.

House flies are very sensitive to the effects of these powders. A few puffs of the dust from an insect gun, blown into the air of a room with the doors closed, the discharges directed towards those parts where flies are congregated, will stupefy and kill them within a very short time. The powder is somewhat pungent, and to breathe an atmosphere charged with it will frequently cause a slight sneezing, but beyond this the operator need not anticipate any annoyance. Frequently during the past summer, when flies have been troublesome, we have pretty thoroughly charged the air in our dining-room and kitchen at night, closing the doors, and in the morning found all, or nearly all, the flies lying dead on the floors. A few minutes after its use they begin to drop on their backs, and after a very short time die; if a room be closed for half an hour after using the powder, few, if any, will escape. By some this energetic action has been attributed to the presence of a volatile oil in the flowers, by other and later investigators to a peculiar crystalline principle believed to be an alkaloid, but this point does not as yet seem to be fully settled.

More recently we have been experimenting with this powder on the green Aphis which troubles our green-house plants. The usual plan of smoking with tobacco is an unpleasant remedy, and is also very injurious to many plants of delicate constitution, whereas the insect powder used to any extent is perfectly harmless to plant-life. After freely charging the air of a green-house with the powder, blowing it in fine clouds of dust among the plants, the tiny tormentors who are busily engaged in sucking the life out of the leaves and tender shoots, soon manifest symptoms of uneasiness and begin to drop from the plants to the ground, and in the course of an hour or two the larger portion of the enemy's forces will be found lying sprawling on the earth in the pots or on the shelves and floor of the house, where, probably partly from the stupefying effects of the powder and partly from their natural inability to find their way to any given point, they fail to reach the plants again and hence perish. By applying the powder freely in the evening and giving the plants a thorough syringing in the morning, they may in the worst cases be almost freed from Aphides by a single application; it is better, however, to repeat its use the next evening, so as to make sure work. The powder does not appear to kill this Aphis as it does the flies. For the purpose of testing this point we placed a number of them in an open glass cell of a microscope slide and powdered them thoroughly, and found some of them alive after two days of such severe exposure to its influence. Having recently found a plant literally swarming with the green Aphis, so that the sight of it was almost disgusting, we submitted it to the action of this powder one afternoon, having previously spread a large piece of white paper under the plant so that the effect of the powder on the insects might be distinctly seen. Almost immediately they began to fall on the paper, and in less than ten minutes a hundred or more of them were lying on their backs or crawling sluggishly about. In the course of half an hour some four or five hundred had fallen on the paper, and when the plant was examined again the following morning, there remained but very few on it, and most of these were removed by a slight syringing. We have had the powder used in green-houses by some of our friends, who also report its success. The matter is well worthy the attention of all those who indulge in window gardening or who grow plants in small conservatories attached to dwellings, since if this proves an efficient and economical substitute for tobacco smoke, it will save much annoyance and some loss. Success will necessarily

depend on the quality of the material used, but after the experiments we have tried, we feel confident that with good Dalmatian powder there need be no failure. It will be interesting to learn as opportunity offers how moths and other insects will be affected by the use of insect powders. If the beautiful specimens which sometimes fly into our rooms at night can be drugged in this way and captured without a struggle, we may add many a perfect specimen to our collections which would otherwise be more or less defaced. There is quite a field for experiment here.

EXPERIMENTS WITH PYRETHREUM ROSEUM IN KILLING INSETCS.

By W. L. Carpenter, U.S.A.

In the August number of the "American Naturalist" appeared an article on the carpet-beetle, by J. A. Lintner, in which the statement was made, as nearly as I can now remember, that "although he had never used *Pyrethreum roseum* as an insect exterminator, he had no doubt that it would prove unavailing if applied to the destruction of the *Anthrenus*." As it seemed unfair to condemn without a trial what is generally regarded as a useful insect poison, I resolved to test it experimentally, and now present the result of several trials with different orders of insects.

The insects were placed under a tumbler, which was slightly raised to admit fresh air, and a small quantity of the *Pyrethreum roseum*, or Persian Insect Powder of commerce, introduced on the point of a penknife. The movements of the insects brought them in contact with the powder, which readily adhered to the body; in attempting to remove it from their appendages, a few particles would be carried to the mouth and thus incorporated in the juices of the stomach with fatal effect.

A honey-bee became perfectly helpless in fifteen minutes, a mud-wasp in eight minutes, a small species of ant in five minutes; a small species of *Pyralidæ* became helpless in twenty minutes; the large *Papilio asterias* resisted the effects of the drug for over one hour, and on being released seemed to recover, but died next day. A larva of one of the *Noctuælitæ* did not seem susceptible; its jaws were repeatedly filled with the powder, which it invariably ejected by throwing out its juices; at the end of two hours it was still able to crawl feebly. A

house-fly became helpless in ten minutes, a mosquito in fifteen minutes, a flea in three minutes.

In experimenting upon the *Coleoptera*, an insect as nearly the size of the carpet-beetle as could be found was secured in *Diabrotica duodecim-punctata*, an abundant species here. It was easily affected, and became helpless in twelve minutes. A small pinch placed in the jaws of a large *Carabus* stopped locomotion in thirty minutes. The *Hemiptera*, owing to their peculiarly shaped mouths, were enabled to vigorously resist the baleful influence. A species of *Coreus* was active at the end of two hours, but was ultimately overcome. A large-sized katydid was deprived of motion at the end of ten minutes; *Caloptenus spretus* likewise in eighteen minutes. A dragon-fly (*Libellulidæ*) died in one hour. Spiders succumbed in one hour and fifteen minutes. The scent from the powder did not produce any bad effect upon insects subjected to its odor where actual contact was not possible, but when carried to the maxillæ or mandibles, the effect is to produce complete paralysis of the motor nerves. The legs are paralyzed in regular order, commencing with the first pair. Insects will sometimes live for days in this condition, but death ultimately results from the introduction into the mouth of the smallest quantity. These experiments prove that all insects having open mouth-parts are peculiarly susceptible to this powerful drug, and, as a result, the writer does not hesitate to recommend the powder to housekeepers as an infallible agent in destroying the carpet-beetle and preventing its ravages. Twenty-five cents' worth of the powder liberally sprinkled on the floor before putting down a carpet, and afterward freely placed around the edges and never swept away, will suffice to preserve a large-sized carpet. No ill effects from its use need be feared by the household, since, if applied in this way, it will be only poisonous to all kinds of insects.—*Am. Nat.*, March, 1879.

GLEANINGS FROM THE GERMAN JOURNALS.

By Louis von Cotzhausen, Ph.G.

Unguentum Hydrargyri.—Dr. Godeffroy states that the thick liquid residue of petroleum refining, if mixed with a little paraffin or ceresin in order to obtain a more solid consistence, is an excellent substitute for lard and suet in the preparation of mercurial ointment. One gram of soft paraffin will make a good ointment in 6 or 7 minutes with

10 grams of mercury.—*Ztschr. d. Allg. Oest. Ap. Ver.*, March 1, 1879, p. 104.

Unguentum diachylon Hebræ. — According to Dr. Vulpius, this ointment as made in Hebra's clinic at Vienna, is far superior in every respect to the officinal (Ph.G.), and will keep for weeks without turning rancid. It is made by the following formula: 1 kg. litharge is heated with sufficient water and 4 kg. olive oil until the reaction is completed, when 50 grams lavender oil are added to the strained and cooling mass.—*Pharm. Ztg.*, March 8, 1879, p. 151.

Carbolic Lint.—Prof. Bruns saturates 1 kg. lint with a solution of 100·0 carbolic acid, 400·0 rosin and 40·0 castor oil in 2 liters alcohol. —*Pharm. Ztg.*, March 8, 1879, p. 151.

Chloral Plasters, recommended for pain caused by colds, neuralgia or syphilis, are made by spreading powdered chloral on ordinary Burgundy pitch plasters—1 or 2 grams of chloral to every square decimeter. They are applied for 24 or 48 hours and then removed; the small blisters formed are opened and dressed with simple cerate, when the original pain has usually ceased entirely.—*Ztschr. d. Allg. Oest. Apoth. Ver.*, Feb. 10, 1879, p. 69.

Virginin, a New Mineral Fat.—Prof. Sonnenschein describes virginin as a new, semi-transparent, yellowish, fatty mass, which when fused has a blue fluorescence; it commences to melt at 47°C., is liquid at 50°, solidifies again at 46°, is partly soluble in ether, and separates again from it as an amorphous, fatty substance. It contains no acid, is obtained from the residue when distilling crude petroleum, does not absorb oxygen from the air, and can never turn rancid.—*Pharm. Ztg.*, Feb. 19, 1879, p. 111.

Caustic Pencils of Sulphate of Copper.—W. Weber deprives sulphate of copper of all water of crysrallization by heating it in a small porcelain dish, stirring continually, until a white powder is obtained. Paper moulds are made over a lead pencil or glass tube; these are filled with the dry sulphate as uniformly and solidly as possible, then closed and carefully rolled into suitable pieces of linen, previously saturated with water and expressed with the hand; after 3 or 4 hours, the salt has re-absorbed its water of crystallization, and after drying for a short time forms very hard pencils.—*Archiv d. Pharm.*, Feb., 1879, p. 160.

ervation of Fowler's Solution of Arsenic.—The well-known decomposition of Fowler's solution, probably caused by organic substances frequently present in ordinary distilled water or brought into the preparation by filtration through paper, is prevented, according to J Mueller, by the addition of 0·4 powdered borax to 100·0 of the solution, which cannot possibly interfere with its efficacy.—*Pharm. Ztg.*, Feb. 22, 1879, p. 110.

Castoreum.—In the opinion of Hager, castoreum should be discarded from the Pharmacopœia, not only because it is an unpleasant medicine to those knowing its origin, but also because it possesses no greater medicinal properties than valerian root.—*Pharm. Centralbl.*, Feb. 13, 1879, p. 65.

Gallate and Hæmatoxylate of Iron Inks.—A. du Bell makes gallate of iron inks, which will keep well for any length of time, by triturating in a porcelain mortar 15 grams of tannic acid, 7·5 grams of lactic acid, 60 grams of distilled water and 15 grams of ferrous lactate until the combination is perfect. Sufficient distilled water to make 720 grams and several drops of chlorine water are added, and the mixture is well shaken and digested in a bottle having a capacity of 2 liters. After 24 hours gum arabic, sugar or glycerin may be added. Hæmatoxylate of iron ink is prepared by making a solution of 15 grams of purified dry extract of logwood, 5 grams of oxalic acid, 15 grams of ferrous lactate and 800 grams of distilled water, and adding to it 5 grams of liquor ferri sesquichlorati, when a dark violet preparation results, which, after gum and sugar or glycerin have been added, will remain unaltered. —*Pharm. Ztg.*, March 12, 1879, p. 158.

Zinc Acetate.—Almost all French, Italian and German works on chemistry state that zinc acetate contains 3 molecules of water, two of which escape at a temperature of 100°, while Dibbit alone claims that it contains but 2 molecules. N. Franchimont's new investigations prove the latter correct, and also that both of these two molecules of water escape at 100°. If the anhydrous salt is heated in a retort it melts, and acetic acid, carbonic acid and acetone are liberated, while plates resembling mother of pearl remain, which Voelckel considers an acid salt, and Larocque sublimed anhydrous zinc acetate. Franchimont agrees with the latter opinion, and states that the sublimed salt has the same melting point as the dried (242°C.), contains 35·7 per cent. Zn,

and can be volatilized without leaving a residue.—*Ber. d. Deutsch. Chem. Ges.*, 1879, p. 11.

Benzoate of Sodium.—The commercial salt is usually amorphous, has a strong, unpleasant odor, a strongly alkaline reaction, and frequently contains considerable sodium chloride and sulphate. Bernbeck prepares the pure compound by treating pure diluted soda lye with pure benzoic acid until slightly acid, heating moderately, filtering, and, if intended to be dispensed in a liquid form, bringing to the specific gravity of 1·04 at 20°C., when the solution contains 10 per cent. of the dry salt. The crystals are obtained by evaporating the solution on a sand bath at a temperature of about 60°C. to one half, and placing the residue over sulphuric acid, when crystals will form. O. Schlickum triturates 6 parts of benzoic acid with 7 parts of crystallized sodium carbonate in a porcelain mortar with pressure, when carbonic acid soon begins to escape and the mixture becomes soft; this is dissolved in water, a little alcohol is added and the mixture dried in the air, when 8 parts of benzoate of sodium are obtained; if dried at 100°, 7 parts of anhydrous salt remain.

Benzoate of Magnesium.—12 parts of benzoic acid and 5 to 6 parts of magnesium carbonate, dissolved in luke-warm water, yield 18·5 parts benzoate of magnesium. In order to obtain a neutral salt calcined magnesia is added after the addition of 5 parts of the carbonate, until blue litmus paper is no longer reddened. The liquid is then filtered, evaporated and placed in a cool place, when needles having the constitution $Mg2C_7H_6O_2+6H_2O$ are obtained.—*Pharm. Ztg.*, Feb. 19 and March 5, 1879.

Starch in Milk.—Dr. Vulpius coagulates the suspected milk, previously heated to the boiling point, with a few drops of acetic acid, and filters after cooling, when the addition of a single drop of a saturated aqueous solution of iodine, containing 0·2 gr. iodine in a liter, will cause a blue cloud, disappearing on shaking; the coloration remains for one minute if 1 cc. is added to 5 cc. of the filtered serum, and constant, if another cc. is added. The presence of 5 milligrams of starch in 5 cc. milk can thus be easily determined by the addition of $\frac{2}{10}$ milligram iodine.—*Pharm. Ztg.*, March 5, 1879.

Determination of Carbolic-Acid-Intoxication.—Normal urine contains sulphates, yielding a precipitate with barium chloride, insoluble

in nitric acid. Carbolic-acid intoxication will transform either all of these sulphates, or at least some, into sulphocarbolates. Since barium-sulphocarbolate is soluble in nitric acid, Dr. Vulpius acidulates the suspected urine strongly with nitric acid, when it will either not be precipitated at all, or only slightly, by barium chloride. The presence of carbolic acid in the system can be thus easily determined.—*Pharm. Ztg.*, March 5, 1879.

Naringin, the bitter principle of Citrus decumana, discovered in Java by de Vrij in 1857, and formerly supposed to be identical with hesperidin, the bitter principle of Citrus limonum, exists in almost all parts of the plant, but most particularly in the fully developed blossoms, which sometimes contain as much as 2 per cent., while the undeveloped contain only 0·29 per cent. A single tree not unfrequently yields 100 kilograms of fresh flowers, which, when distilled with water, yield an oil of neroli equal in all respects to the French or Italian oil. While distilling this oil a large percentage of naringin was found to separate in needle-shaped crystals on cooling of the residue. It was purified by dissolving in boiling water, separating the coloring matter and tannic acid by sugar of lead, redissolving repeatedly in alcohol the almost pure naringin, which crystallizes from the liquid on cooling, precipitating by adding water, and finally crystallizing from hot acetic acid in white crystals, resembling quinia sulphate. Hoffmann finds naringin soluble in 300 parts of cold, very soluble in hot water, alcohol and glacial acetic acid, insoluble in chloroform, ether, etherial oils and benzol; it has a bitter taste, rotates polarized light to the left, and forms yellow solutions with alkalies, from which it is precipitated in crystals by acids. When boiled with diluted acids, it splits into a crystalline substance and a sugar, resembling mannite, called hesperidin sugar. When dehydrated, it melts at 171°C., is colorod brownish-red by solution of iron-chloride, and is easily distinguished from all other principles of Aurantiaceæ, hesperidin, limonin and murrayin, by its solubility, melting point and reaction with chloride of iron.—*Archiv d. Pharm.*, Feb., 1879, p. 139.

Betulin, a peculiar principle of birch bark, was isolated in colorless needles, melting at 251°, by Wigman, by extracting the bark with boiling 96 per cent. alcohol, distilling off the alcohol, treating the residue first with water and then with soda-lye, crystallizing from benzol or petroleum, and decolorizing by boiling an alcoholic solution of

it with animal charcoal. Elementary analyses prove Hausmann's formula for betulin, $C_{36}H_{60}O_3$ and $C_{36}H_{58}O(C_2H_3O_2)_2$, his formula for the acetate, which consists of long, colorless needles, correct.—*Ber. d. Deutsch. Chem. Ges.*, 1879, p. 7.

Daphnetin was obtained by Carl Stuenkel by dissolving commercial extract of daphne mezereum in alcohol, heating with hydrochloric acid in order to split the glucoside daphnin, existing in the solution, into daphnetin and sugar, evaporating the liquid on a water-bath until only traces of HCl continue to evaporate, boiling the black residue repeatedly with water, mixing the reddish-brown decoctions, condensing, adding a small quantity of neutral lead-acetate to remove the coloring matter, etc., then by continued fractional precipitations effecting a combination of daphnetin and lead oxide, which was decomposed by sulphuretted hydrogen, when a comparatively pure daphnetin was obtained, which was purified by boiling with animal charcoal. Daphnetin is soluble in boiling water, more so in diluted alcohol, crystallizing from thsse solutions in yellowish-white prisms, is scarcely soluble in ether, benzol, chloroform and carbon bisulphuret, forms red solutions with concentrated H_2SO_4 and HCl, is precipitated from these by water and forms reddish-yellow solutions with caustic alkalies and alkaline carbonates.—*Ber. d. Deutsch. Chem. Ges.*, 1879, p. 109.

Lactucon is made by Wigman by extracting lactucarium prepared from Lactuca altissima, first with water, then with diluted alcohol, and boiling the residue with 90 per cent. alcohol. Wart-like granules were obtained on cooling, which, after being treated with animal charcoal and recrystallized several times from alcohol, proved to be groups of microscopic needles. They melt at 296°C., become amorphous, are insoluble in water, scarcely soluble in alcohol, but readily soluble in petroleum. The author considers lactucon homologous with camphor and Paterno's zeorin.—*Ber. d. Deutsch. Chem. Ges.*, 1879, p. 10.

NOTE ON THE MORE ACCURATE ESTIMATION OF QUINIA IN FERRI ET QUINIÆ CITRAS, B. P.

By W. Stevenson.

The Pharmacopœia process for the estimation of quinia in ferri et quiniæ citras frequently occasions some difficulty as regards the amount of washing required by the precipitated quinia. If the whole of the

iron is to be removed, a loss of the alkaloid must occur to some extent, owing to its slight solubility in water. The following modification has been found to give more accurate results:

Five grams of the citrate to be taken. Dissolve in 50 cc. of water, add a slight excess of dilute ammonia ·960, stir well, and after standing five minutes pour on to a double filter, made of two filter papers of open texture, tared on a balance, one against the other, by cutting down the heavier; the smaller one to be placed outside to prevent the precipitate getting between the two. This dispenses with weighing and drying a filter, as both have the same solutions passing through them and remain equal in weight.

Instead of distilled water, the following solution is to be used for washing: 1 oz. of ammonia ·880 is added to 80 ozs. distilled water. The precipitated and washed quinia from one drachm of the sulphate is added to the dilute ammoniacal solution and well shaken during twenty-four hours. As much as may be required is then filtered and used in an ordinary wash bottle.

The precipitated quinia may now be freely washed with this solution; no quinia will be lost, and if the precipitation has been properly performed every trace of iron may be removed in from five to ten minutes, leaving the alkaloid white and granular. In this short time any quinia deposited by evaporation of the washing solution would be so small that it may be neglected. Remove the filter from the funnel and thoroughly drain on bibulous paper for two or three hours. If the drying be commenced without this precaution, the water held by the precipitate will, on becoming hot, dissolve a portion of it. Dry at a temperature not exceeding 100°F. until constant in weight, the outside filter acting as a counterpoise.

Very accurate results have been obtained as above, known weights of quinia having been added to ferri citras, ferri et ammoniæ citras, etc., and, though it may appear an unnecessary complication of the B. P. process, it really requires less time when the solution is kept ready made up. The suggestion is simply an adaptation of Teschemacher's excellent method of estimating morphia in opium.—*Phar. Jour. and Trans.*, Feb. 15, 1879, p. 673.

NOTE UPON THE CINCHONA ALKALOIDS.

By Dr. O. Hesse.

On p. 611 of this journal Mr. J. E. Howard sought to refer the injurious action of the "mixed alkaloids" prepared from the bark of *C. succirubra* to their containing aricin or an amorphous decomposition product from it. But since this bark contains neither aricin nor the easily decomposable cusconin, with which some authors are wont to confound aricin, and as further it does not yield amorphous substances which can be taken for decomposition products of this alkaloid, the above opinion must at any rate appear to be unfounded.

It is true that in 1862 Mr. Howard claimed to have prepared aricin from the bark in question, but in subsequent investigations of it he does not again mention this alkaloid. Probably the substance was only cinchonin, which under certain conditions crystallizes in a form that resembles aricin. The reverse of this accident almost happened to the discoverers of aricine, Pelletier and Coriol, for they say: "La ressemblance qui se trouve entre ces deux substances nous avais déja fait penser que c'était de la cinchonine que nous avions obtenue." Nevertheless the two alkaloids are readily distinguishable by their behavior towards an excess of dilute sulphuric or oxalic acid, inasmuch as aricin is precipitated by these acids, whilst cinchonin remains in solution. These precipitates are crystalline, and so difficultly soluble in water and in dilute acids that they might be taken for sulphate or oxalate of lime respectively. Also if cusconin be present a precipitate is formed by sulphuric and oxalic acids, but these precipitates are gelatinous and do not show the least trace of crystallization.

As a fact, at the present time the bark in question does not contain the minutest trace of aricin or cusconin. On the other hand there are found in it, besides varying quantities of quinia, cinchonidin and cinchonin, also the following alkaloids: conquinia, conquinamin, paracin and two or three other amorphous basic substances; probably also cinchotin.

One thing worthy of note in this bark is the quantity of quinamin it contains, which amounts to about 0·4 per cent. According to the experiments of Professor Falck quinamin appears to moderate the temperature of the body in a manner similar to quinia. In a rabbit to which I had administered 0·1 gram of quinamin dissolved in acid by injection into the throat I could observe no lowering of the tempera-

ture. Quinamin would therefore appear not to participate in the sometimes peculiar action of the mixed alkaloids.

I believe moreover that the before mentioned action of the mixed alkaloids is referable to the individual better-known cinchona alkaloids, inasmuch as every person is not similarly affected by them. Under these conditions it would be the business of the physician to determine which substance should be given in a particular case.—*Pharm. Jour. Trans.*, April 12, 1879.

DISTILLED ESSENCE OF LEMON.

By John Moss, F.I.C., F.C.S. Lond. et Ber.

The interest attaching to this body at the present time was excited by a paper (read before the Pharmaceutical Society on the 5th of February, and published in the Society's Journal on the 8th) entitled, "An Examination of Distilled Essence of Lemon." The author, my friend Dr. Tilden, intimated to me some months ago his desire that my firm should prepare for him a small quantity, not less than eight ounces, of the essence from the peel of the fresh fruit. The essence of lemon of commerce being notoriously and skillfully adulterated, he wished to operate on an article to which no suspicion of admixture could possibly attach, and we on our side were very pleased to place the resources of our laboratory at his service to further the important researches on the composition of the essential oils, which he has been prosecuting now for some years. Curiously enough, the discussion on Dr. Tilden's paper did not once refer to the more important scientific aspect of the question displayed to the meeting, the principal speakers contenting themselves with the utterance of a decorous and prolonged exclamation of surprise at what was, after all, for the occasion, of very secondary importance, namely, the author's statement that the distilled essence prepared for him "had a most deliciously fragrant odor of the peel, superior, in my opinion, to the foreign essence." At the March meeting of the Society, I placed on the table a small specimen of the distilled oil, which had been reserved from the quantity prepared for Dr. Tilden, and also for purposes of comparison, some of the finest imported oil. Connoisseurs differed as to the respective merits of the two essences; but the majority of them agreed with Dr. Tilden's estimate of the distilled oil. Tested by smelling at the neck of the bottle,

the foreign essence did, perhaps, produce a more favorable impression; but, when rubbed in the hand, as the fashion of the expert is, the fruity fragrance of the distilled oil passed out of comparison with anything the imported one could furnish. The odor might be a little "thin" and lacking in persistence, but superior delicacy was manifest.

Seeing that so much interest was excited by the specimens, some details of the distillation will probably not be unwelcome, and will afford a means of instituting that "comparison of the operation of obtaining oil of lemons, as performed by Mr. Moss in this country, and the usual operation abroad," asked for by Mr. Giles in the discussion previously alluded to.

It was supposed that the peel of 600 lemons would yield the weight of essence required by Dr. Tilden, viz., eight ounces, and that quantity, weighing forty-seven pounds, was accordingly operated upon as soon as received into the laboratory. It was placed in a small copper still capable of holding thirty gallons, covered with cold water, and heat applied. Twelve gallons of liquid were distilled over into an earthenware receiver, from which, when the oil was judged to have separated, the water was run off below into a similar vessel. The oil, not quite free from water, was allowed to stand in a separating funnel, and when all the water was removed measured three and a half ounces. This result was disappointing, as it did not come up to half of the estimated yield. No more oil had appeared on the surface of the separated water, and accordingly ten pounds of salt were dissolved in it, with the hope that a further slight separation might be promoted thereby. The expedient was futile, though the solution stood over night. In the morning the liquid, salt and all, was returned to the still, from which the peel had not yet been removed, and twelve gallons were again drawn over. Not a single drop of oil was obtained from this distillate.

It was therefore necessary to operate on a further quantity of peel, and this time fifty-two pounds were taken; for practical purposes, the same quantity as before, viz., the peel of 600 lemons. In this operation no salt was used, and only one distillate (twelve gallons) was collected. The yield was eight and a half fluidounces, or more than twice the quantity formerly obtained. Before distilling, however, this lot of peel was well crushed, and the cellular tissue torn apart to free the oil. No doubt this had a very important influence on the yield of oil, but I cannot think that the whole of the gain was due to it, espe-

cially when it is remembered that the vertical granite runners, which came into actual contact with the peel, have a crushing surface of about twenty-four square feet, and the granite bed on which they run has a surface of thirteen square feet. The wetting of this large surface by the liquid contents of the peel no doubt occasioned a loss of oil of some importance when referred to the small quantity operated upon. Working on large quantities the absolute loss would be very little greater, and the relative loss would, of course, be very much smaller. Giving these facts due consideration, I think that the second lot of peel was naturally much richer in oil than the first.

The peel was taken from lemons which were not only ripe, but old, being of the season 1877, and the distillation being made in July, 1878; they were, therefore, at least nine months old, and had not only lost oil in ripening, but also in keeping.

In Pharmacographia it is stated that by the *sponge process*, as practiced in Calabria and Sicily, 400 fruits yield from nine to fourteen ounces of oil, *i. e.*, 600 fruits yield from thirteen and a half to twenty-one ounces of oil. Taking the average yield of this number of fruits, about seventeen ounces, it will be seen that the larger product obtained as described above was exactly half this quantity. This being so, and remembering the age and condition of the peel, there are good grounds for believing that under favorable conditions distillation will yield as large results as the processes now employed; indeed, from what Prof. Redwood states respecting essence of limes, there is reason to believe that the distillation will show an advantage in this respect.

Both Pereira and the authors of Pharmacographia state that oil of lemon procured by distillation is of inferior fragrance. It is highly probable that the construction of the still may account for some portion of the difference between the subject of their remarks and the subject of this short paper. In conclusion, I may state that the still employed in these experiments was expressly constructed for the distillation of medicated waters.—*Pharm. Journ. and Trans.*, March 29, 1879.

YERBA SANTA (Eriodictyon Californicum), AS A MEANS OF DISGUISING THE TASTE OF QUINIA.

By Henby M. Kier, M. D.

Living in a malarious country, where intermittent and typhoid fevers prevail, physicians cannot be indifferent to the many urgent requests of their patients to provide them with a remedy devoid of bitter taste, and which can be taken easily. Accordingly, in furtherance of this universal desire, I have experimented to quite an extent in the endeavor to obtain an innocent, palatable vehicle for the administration of the bitter, active anti-periodics; but with indifferent success, until some four or five years back, I commenced the use of the Yerba Santa, in the form of elixir and syrup, and found it to be a most excellent remedy to disguise the taste of many bitter drugs. The well-known bitterness of the quinia salts forms a great objection to their use, but when given in combination with either of the preparations above named, in the proportion of ten to twenty grains to the fluidounce, they are rendered palatable, or at least tolerable, are retained much more readily by a delicate stomach, and can be given in this manner without the patients knowing anything of the nature of the remedy prescribed.

The peculiar property of the Yerba Santa leaf, in imparting to quinia the taste of starch when chewed and held upon the tongue for a second, has been well known for years to the old settlers of California, and it was a knowledge of this fact which first led me to employ it in the form above indicated.

As regards the plant itself, my experience has taught me that, like many of the so-called "New Remedies," of which, singularly enough, we have heard so much lately, it has but liltle, if any, special therapeutical power, and can be given *ad libitum* in any quantity or form prepared.

Any competent pharmacist can prepare a syrup or elixir in the manner he may deem best. However, an admirable syrup may be obtained by boiling for an hour two ounces of the fresh, or recently dried leaves, with fourteen ounces of water and two of glycerin, percolating through the residue an ounce of brandy, and adding to what would be a pint of the product, two pounds of sugar.

A working formula for the elixir can be modeled after that for elixir calisaya, substituting for four ounces of yellow calisaya seven to eight of the Yerba Santa, and for the syrup one pound of glycerin and eight

to ten pounds of sugar, this latter to be dissolved by gentle heat in the percolate, after filtration.—*Pacific Med. and Surg. Jour.*, March.

Knight's Landing, Yolo, Co.

CODLIVER OIL EMULSION.

By William Gilmour.

Codliver oil emulsions in various forms are peparations which have of late become somewhat popular. I express no opinion whatever on any of these preparations, far less do I intend to individualize any preparation by attempting to give a copy of the formula. I simply recognize the unfortunate necessity which sometimes arises of following where our inclination does not lead, and I therefore give a formula for an emulsion, believing it without prejudice equal to any of the many now bulking so largely before the profession and the public.

Of all the excipients suggested by different authorities, as well as commending themselves to one's own approval for emulsifying codliver oil, none, I think, equals gum tragacanth. Without, therefore, ignoring other substances, such as mucilage of gum arabic, white of egg, alkaline solutions, and so on, I have principally endeavored to ascertain the conditions most favorable to produce with tragacanth an inseparable emulsion, which at the same time would be miscible with water, contain a reasonable amount of oil, and be not particularly objectionable in appearance, taste or smell. Of course in all these preparations much may be left to individual fancy as to combination, and I therefore make no suggestion as to all the different ingredients which may be "hotched potched" into it further than this, that if oil of bitter almonds be the flavoring agent employed, the emulsion need not be spoiled by the addition of an extravagant excess of the bitter almond. Experience and experiment both have determined that a half per cent., or about two drops to each ounce of codliver oil employed, is the proper proportion, and that of the two oils, namely, an oil deprived of its hydrocyanic acid, or an oil containing it, the latter is much preferred.

As to the emulsion, let three drachms of the finest white powder of tragacanth be rubbed up in a large mortar with three ounces of glycerin. To this add as much boiling water as will convert it into a thick, transparent jelly, from eight to ten ounces probably being required. After cooling add the codliver oil, which should first be mixed either

with plain water or lime water in the proportion of one of the latter to three of the oil; or if, as is customary, the emulsion is intended to contain the hypophosphites of lime or soda, let these be added to the plain water previous to mixing with the oil, and then let this primary emulsion be gradually added to the mucilage of tragacanth with constant stirring. In the process of mixing, the emulsion not only creams but also thickens up to a certain point, and individual taste must settle the extent to which the mixture may be carried. I have found the three drachms of tragacanth emulsify from 50 to 80 ounces of what I have called the primary emulsion, the former quantity being very thick and not easily poured from the mortar, the latter quantity flowing more freely and forming what I consider the better emulsion. In mixing the oil with the mucilage of tragacanth care must be taken not to add it too hurriedly else it will not emulsify. The mixture will simply break up into a clotted mass and no amount of labor apparently will bring it back to the emulsified form. Under these circumstances the better way is at once to begin again with a small quantity of fresh mucilage, to which the clotted mass should be carefully added by degrees. In this way only can the emulsion be brought back to its proper form.—*Pharm. Jour.* [Lond.], March 22, 1879.

FRAGRANT WOODS.

By P. L. Simmonds.

The properties and uses of woods are various; some are sought for their beauty and utility for the cabinet-maker or pianoforte manufacturer, some for their adaptability for carving or engraving on, others for their coloring properties, and some for their medicinal uses. There are a few, however, which have the rare attraction of being fragrant and odorous, and hence are valued for small and special fancy articles for ladies' use, or for the purposes of the perfumer, who distils pleasant scents from them. Although fragrant odors are very generally diffused over the vegetable kingdom, yet they are not often centered in the woody fibre of plants. We know these odors well in flowers, and we find them strongly diffused in many aromatic leaves, as the lemon and citronelle grasses, the leaves of the Faham orchid (*Angræcum fragrans*), and of the *Eucalyptus citriodora*, and *E. odorata*. Sometimes the pleasant odor or pungent flavor is concentrated in the seeds and seed-vessels, as in the nutmeg, the tonquin bean (*Dipterix odorata*), the musk seed (*Abelmoschus moschatus*), the odoriferous seeds of *Oxydendron Cuyumany* (Nees), the vanilla pods, and those of *Myrospermum frutescens* (Jacq.), etc., of South America. In several trees the aromatic principle is strongest in the barks, as in cassia and cinnamon, the sassafras of

Tasmania (*Atherosperma moschata*), and *Croton cascarilla* and *C. eleutheria*, of the Bahamas. Essential oils are obtained from many of these.

The study and consideration of woods may be influenced by many causes, according to the purpose to which they are to be applied. The cabinet-maker will group them according to the disposition of their colors and the distinction of their fibres, and will sometimes also take into consideration the odor, which is an essential point in the eyes of the perfumer. As I do not remember to have seen any grouping of the fragrant or odorous woods, I propose condensing a few observations as a guide to those who may be interested in this class of woods, which is not, after all, extensive, and only a few of which are as yet much used. Two or three are tolerably well known, such as camphor, sandal and cedar-woods; others have not been so generally described.

The bark of *Ocotea aromatica*, from New Caledonia, possesses a strong sassafras flavor, and there is a fragrant bark yielded by the *Alyxia aromatica*, of Java and Cochin China; but as I have not met with specimens, I cannot tell whether the odor penetrates to the wood. The *Ixora* (*Coffea*) *odorata* of Tahiti has, however, I know, a close and fragrant wood.

In Tasmania and Australia we have the musk-wood (*Eurybia argophylla*), with a timber of a pleasant fragrance and a beautiful mottled color, well adapted to turnery, cabinet work and perfumery purposes. The native boxwood (*Bursaria spinosa*, Cav.) has also a pleasant but fleeting scent. The scent-wood of the same island (*Alyxia buxifolia*, R. Br.) has an odor similar to that of the tonquin bean. It is but a straggling seaside shrub of three to five inches in diameter, and consequently does not produce wood of any size, but is fine and close-grained, of a lightish-brown mottled appearance.

In the colony of Western Australia we have the raspberry jam wood, a species of *Eucalyptus*, which derives its popular name from the similarity of the scent to that preserve. It is a handsome wood, well fitted for cabinet purposes.

Many of the Australian woods exhibit a peculiar beauty of structure, which adapts them for small furniture and turnery uses. Some are highly fragrant and retain their agreeable odor for a considerable period of time, which renders them additionally pleasant and acceptable in the form of ornamental articles for the boudoir and drawing-room. The scented myall (*Acacia homalophylla*) is a very hard and heavy wood, which has an intense and delightful smell of violets. It has a dark and beautiful duramen, which makes it applicable to numerous purposes of the cabinet-maker and the wood-turner, and an infinite variety of minor uses. It rarely exceeds a foot in diameter, but has been used as veneers. This tree is common in many parts of Australia; since the London Exhibition of 1862, when the caskets, pipes and other articles shown from Queensland, and the remarkable property it possesses became generally known to European manufactures, the wood was in request for making glove, handkerchief and other fancy boxes. As long as it remains unpolished it preserves this peculiar fragrance of violets, which does not occur with such perfection in any other known substance.

The desert sandarac pine (*Callitris verrucosa*) is a tree of moderate size from the vicinity of the river Murray, seldom attaining to more than eighteen inches in

diameter. It has a peculiar odor, from which it is sometimes called camphor-wood, and it is said to be obnoxious to the attacks of insects. The dark beauty of its wood makes it useful for many articles of small cabinet furniture. The mountain sandarac pine, another species similar to the preceding one, is available for identical uses.

The sassafras-tree (*Atherosperma moschata*) has an aromatic bark, which yields an essential oil, resembling the sassafras oil of America, with an admixture of oil of caraways. The timber, which is useful to the cabinet-maker, has a dark duramen, and frequently exhibits a pleasant figure, it has also the quality of taking a beautiful polish. Sassafras wood (*Sassafras officinale*), which is brought over from North America in billets, is highly aromatic, both in smell and taste, owing to a yellow volatile oil it contains. As this repels insects, the wood is used in India for the interior work of trunks, drawers, boxes, etc.

Brazilian sassafras is the aromatic bark of *Nectandra Cymbarum* (Nees). The fragrant bark of the swamp sassafras of the United States (*Magnolia glauca*) is greatly sought by beavers, and hence is often called beaver-wood. A common deception is much practiced in the streets of London in selling artificially scented woods and roots which have been steeped in citronelle and other pleasant essential oils.

The sandal-wood of commerce is the product of various trees belonging to the genus *Santalum*, and that species called *Santalum album* for a long time furnished the principal supply. Being a hard, close-grained and ornamental wood, it is used for some descriptions of cabinet work, and various carved ornamental and useful articles, such as fans, writing desks, work-boxes, card-cases, album-covers, etc., are made of it. But its chief characteristics consists in the remarkable smell of the wood, which it owes to the presence of a peculiar volatile oil, extensively used by the natives of India as a perfume. This also has caused it to be largely used as incense to burn in the temples of China.

The roots, which are the richest in oil, and the chips go to the still, while Hindoos who can afford it show their wealth and their respect for their departed relatives by adding sticks of sandal-wood to the funeral pile. The wood, either in powder or rubbed up into a paste, is employed by all Brahmins in the pigments used in their distinguishing caste marks. The oil forms the basis of many scents, and is sometimes used for impregnating with its scent articles which, being really carved from common wood, are passed off as if made from true sandal.

In course of time sandal-wood was discovered to be abundant in some of the South Sea Islands, where it is the product of several species of *Santalum*, different from the long-known Indian one; there are about ten species of the genus, which are chiefly restricted to the East Indies, Australia and Oceania.

The Indian species are *Santalum album* and *S. myrtifolium*. The former is a small tree from twenty to twenty-five feet high, which is found on the border of Wynaad in the Peninsula, and in Mysore. The exports of the wood from Madras are considerable to Bombay, Bengal, Pegu and the Persian Gulf. The wood is burnt to perfume temples and dwelling-houses. The same tree yields both the white and yellow sandal-wood, the last being the inner part of the tree; it is very hard and

fragrant, especially near the root. The Mahomedans obtain a precious oil from the moist yellow part of the wood, which they value as a perfume. Large shipments of it are made to Bombay, Bengal and the Persian Gulf. The tree grows in the islands of Sandal, Timor, Rotti, Savul, Samar, Bali and in the eastern part of Java, in the arid soil of the lower regions. The wood, which in its color and texture resembles boxwood, is much sought for as an article of commerce by the Chinese, who use the sawdust for making rings and pastiles for burning, and also for marking the time passed during combustion, when it exhales an agreeable odor.

Mixed with some chemical preparation the sawdust is often used in scent-bags, which hang as charms to the women's dresses. The imports of sandal-wood into China have, however, of late years, almost ceased. Whilst in 1862 and 1863 from 7,500 to 8,000 piculs (1¼ cwt.) of sandal-wood, valued at about £14,000, were imported into Canton, within the last four or five years it has dropped to 20 or 30 piculs.

At Chefoo it is still imported to the extent of 520 piculs, and the general imports into the treaty ports amounted in 1872 to 64,237 piculs.

In Europe, sandal-wood is chiefly used for carving and turning. In the Indian Museum, South Kensington, specimens of the ornamental application of sandal-wood in the East may be seen in boxes inlaid with ivory, a handsome carved sandal-wood table from Bombay and other articles.

The Australian species of sandal-wood are believed to be derived from *S. lanceolatum*, *oblongatum*, *obtusifolium*, *ovatum* and *venosum*. The tree is found in Queensland and Western Australia. At the London International Exhibition of 1862 a fine log of sandal-wood, weighing 4½ cwt., was shown from Blackwood River, Western Australia, and another, 3 ft. 6 in. long by 11 in. diameter from York. Specimens were also shown at Paris in 1878. The Australian sandal-wood is of an inferior quality as regards odor.

In 1849, 1,204 tons of sandal-wood, valued at £10,711, were shipped from Western Australia. The merchants bought it for shipment at £6 to £6 10s a ton. Now the sandal trees of any size, within a radius of a hundred and fifty miles of Perth, have been cut down, and little can be obtained except from a great distance. In 1876, 7,000 tons were exported, of the estimated value of £70,000.

How long the colony may be able to continue to supply at the rate the trade is being carried on at present is another question, and a very serious one. Every year the expense of carriage becomes considerably enhanced by reason of the larger distance to be traversed, and the supply in some localities is altogether exhausted.

It is probable that there are several distinct species of the tree in the South Sea Islands which have yet to be botanically determined. The tree is not found on all the islands of the Pacific; its head-quarters would appear to be among those of the southwestern portion, including New Caledonia, the Loyalty Islands, New Hebrides, Esperito Santo and some others. In the Fiji Islands, which have produced several thousand tons within the last thirty years, the tree has become very scarce. It is only the central portion of the tree which produces the scented yellow wood constituting the sandal-wood of commerce. The trunk and larger branches are cut into lengths of from 3 to 6 ft., and the whole of the bark and outer white wood are

clipped off with the axe—an operation technically called "cleaning." Thus a log 1 foot in diameter is reduced to a billet only from 4 to 6 in. thick. The quality of the wood depends on the quantity of the oil contained in it, as indicated by the smell when freshly cut or burned. The old trees produce the best, and in them that part of the wood near the root is the most prized. A handful of the shavings of the wood will prevent moths from attacking clothes of any description, and I have successfully used the same means to keep away insects from specimens of natural history. Owing to a similar strong aromatic odor, furniture made of the fragrant timber of the bastard sandal-wood of Australia (*Erimophila Mitchellii*, Bentham) may be kept free from the attacks of insects. The wood is hard, of a brown color, nicely waved and beautifully grained. It will turn out handsome veneers for the cabinet-makers.

S. austro-Caledonicum (Viell), of New Caledonia, furnishes a superior kind of sandal-wood to that of other countries, owing to the strength and fineness of its odor. It is to be regretted, however, that this tree is being ruthlessly destroyed in the island, as the wood is of such great use in perfumery. Scarcely anything but the stumps and roots left from former times can now be utilized. An essential oil, distilled in England and France from sandal-wood, fetches £3 per pound. The powdered wood for filling sachets and other uses is sold at 1s. the pound. The Pacific species of sandal-wood are *S. ellipticum* and *S. Freycinetianum* (Gaudichaud), which are met with in the Sandwich Islands. The latter species is found in the high mountainous ranges of Tahiti, but the wood is of inferior quality as it is not odoriferous, or only becomes so by age. The wood of *Myoporum tumifolium* (Forster) is used as a substitute for sandal-wood; the fragrance of the fresh wood is very pleasant, but it soon loses this after being kept some time.

The cedar-wood chiefly imported is *Cedrela odorata*, from Cuba, Mexico and Central America, in quantities varying from 3,000 to 5,000 tons yearly, and the red and pencil cedar of Virginia and Bermuda, *Juniperus Virginiana*. Fragrant cedrine, an essential oil, is distilled from the wood. The cedar-wood of British Guiana (*Icica altissima*, Aubl.) has also a strong aromatic odor which keeps away insects, and adapts it for cabinets, wardrobes, etc. In the translation of Latin authors the citron-wood has often been quoted for the cedar, without taking into account the difference which Pliny makes between the two woods. *Cedri* tantum et *citri* suorum fructicum in sacris fumo convolutum nidorem noverant, etc—Pliny's "Natural History," book xiii. And the description which Theophrastus gives of the Thuya and Homer cites in his "Odyssey": "A great fire burnt on the hearth, the odor of the cedar which is easily split, and of the Thuya which was consumed, spread widely over the island."

Pinus Cembra of Russia is another of the fragrant woods.

The fragrant rosewood or Palisandre of the French cabinet-makers has been ascertained by M. Brogel to belong to two or three species of *Triptolomea*.

An undefined rare wood from South America, called *Palo santo*, has a fine odor, which it never loses. It takes a magnificent polish, is of a green color, very solid and elastic. It may be used for furniture, wind instruments, and would make magnificent pianos. A log brought down the river to Parana some years ago measured

27 feet in length, with a section of 17 inches square. The violet wood of British Guiana (*Andira violacea*) derives its specific name more from its color than of its scent.

In Japan they use the wood of a small tree called *camaboc* largely for making toothpicks, which is of itself quite a trade in that country. The bark has a peculiar and pleasant aromatic flavor. A small portion of the bark is allowed to remain on each toothpick. All the Japanese use them regular after every meal.

The odor of the cinnamon wood is familiar in domestic economy.

The camphor-wood boxes brought from China and the East are well known for their strong preservative odor, and found useful for keeping away moths from woolens and furs. The China and Japan camphor tree (*Cinnamomum camphora*), *Camphora officinarum*, belongs to the laurel family, but that of Sumatra and Borneo is the *Dryobalanops aromatica*. Even the leaves and fruit smell of camphor. In Sumatra this tree is abundantly met with on the west coast, chiefly in the extensive bush, but seldom in places more than 1,000 ft above the level of the sea. The tree is straight, extraordinarily tall, and has a gigantic crown which often overtops the other woody giants by 100 feet or so. The stem is sometimes twenty feet thick. The barus camphor of this island is the most esteemed of any, and it is for this drug, obtained in small quantities—seldom more than half a pound to a tree—that it is ruthlessly destroyed. The tree, when felled, is divided into small pieces, and these are afterwards split; upon which the camphor, which is found in hollows or crevices in the body of the tree, and above all, in knots or swellings of branches from the trunks, becomes visible in the form of granules or grains. An essential oil also exudes from the tree in cutting, which is sometimes collected, but is scarcely remunerative. On the west coast of Formosa there are forests of camphor-wood, and a great deal of crude camphor is shipped thence to Amoy and other Chinese ports. Large quantities of the wood are sawn into planks. Tables and cabinets are then made of it, and it is also turned into platters and washing-basins.

Only a small portion of the vast camphor forest of Formosa has been reclaimed from its wild inhabitants, and this consists of fine tall trees, the growth of ages. When a tree is felled the finest part of the wood is sawn into planks, the rest chopped small and boiled down for the camphor.

Camphor-wood (*D. aromatica*) grows in abundance in the mountains of Santerborg, Marang, Sunda and Surgany Water, Borneo. Its girth reaches 17 or 18 ft., and the stem often attains the height of 90 or 100 ft. to the first branches. The wood contains a quantity of oil, is tough, durable, and, owing to its strong scent, withstands the attacks of the worm so destructive in those seas. Hence it is much valued for ship-building. It takes metal fastenings well from being oily, and iron has been found not so liable to rust in it.

An essential oil of roses from some undefined wood, called *Aspalathum* (probably a Convolvulus or species of *Rhodozira*), is distilled in France and Germany and sells at about £3 the pound. There is a wood which comes from French Guiana, called there *Bois de rose femelle*, believed to be the produce of *Licaria odorata*, which has a delicious odor approaching to bergamot, but being extremely fugitive it is necessary to pulverize the wood at the moment of distillation. The essence drawn from it is now

employed by the Parisian perfumers. It is a coarse-grained, yellow wood, and scarcely ornamental enough to be sought for cabinet work.

The Lignum aloes, Garoe, Calambak, or eagle-wood of commerce, is of all perfumes that most esteemed by Oriental nations. The trees from which it is obtained are not well defined. The best is supposed to be from *Aloexylon Agallochum* (Lour.) of Cochin China, while the *Aquilaria ovata* (Cav.), and *A. Agallocha* (Roxb.), of tropical Asia, furnish, it is believed, other kinds of aloe-wood. All are highly fragrant and aromatic, and occasionally used by cabinet-makers and inlayers.

Aquilaria Agallocha (Roxb.) is a medium-sized tree growing in Borneo, Sumatra, and Java in the high regions. The wood is compact, of a yellow color streaked with black. By rubbing, however, it only gives forth an odor of rhubarb, which is also palpable in slicing the wood. The most esteemed kinds of this wood are obtained from the mountainous countries of Cambodia and Cochin China, to the east of the Gulf of Siam. It is the decaying old heart-wood which is burnt for perfume.

Incense wood is the fragrant product of *Icica guyanensis*.

In conclusion, it may be added that, while some woods attract by their pleasant odor, others are so obnoxious that they have obtained the appropriate names of stink-woods Of this we have an example in the stink-wood of the Cape of Good Hope (*Laurus bullata*), which has a very disagreeable smell when cut; hence its vernacular name. The brown-colored wood is durable, takes a good polish, and might probably be employed for cabinets for natural history collections as it is not attacked by insects.—*Jour. Applied Science*, March 1, 1879.

VARIETIES.

A New Coffee Adulterant.—In the recent annual report of the principal of the Inland Revenue Laboratory, some observations were made on a new method of adulterating coffee, which has lately been detected. The adulterant in question consists of *date-stones*, which, after being roasted and ground, form such an imitation of coffee as would, when mixed with the genuine article, easily deceive the consumer. Information received by the Inland Revenue authorities at Somerset House from a supervisor at Liverpool has led to an early discovery and suppression by the Somerset House authorities of this new mode of adulteration. Many tons of date-stones (a refuse from the manufacture of spirits at a distillery in Liverpool, and which had hitherto been considered useless) were being bought by a foreigner to be forwarded to Manchester, and supposed to be intended as an adulterant of coffee. It was subsequently ascertained that a manufactory had been established in that city for the preparation of "Melilotine coffee"—a mixture of coffee, chicory and date-stones. Of this "Melilotine coffee," and of the prepared date-stones, several tons had been seized. The early detection of this adulterant has prevented the consumption of any large quantity of the "coffee."—*Louisville Med. News*, March 15.

Chloramyl.—Chloramyl, the name given to a mixture of chloroform, 1 lb, and nitrite of amyl, 2 drachms, is recommended as a new anæsthetic by Dr. G. E. Sanford in the "Medical Record" He claims for it a trial on the ground of its safety as well as efficiency, the amyl antidoting the syncopal action of the chloroform, while not modifying its anæsthetic properties.—*Proceedings of Medical Society of King's County.*

APOTHECARIES AND THE RECTIFIERS' LICENSE.

In some sections of the United States druggists have received notice from the collectors of Internal Revenue that they could not lawfully make use, upon their premises, of an apparatus for the recovery of alcohol necessary to the manufacture of chemical and pharmaceutical preparations, when a license as a "liquor dealer" had been granted to said druggist, without taking out a "rectifiers'" license!

We have always been of the opinion that this was an unjust construction of the law, oppressive to druggists, and not within the intention of the statute.

Mr. W. W. Heritage, of Philadelphia, has interested himself in a laudable manner to obtain from the Department of Internal Revenue a decision in the premises. The commissioner has taken a liberal and intelligent view of the subject, and we have no doubt that his decision will meet with the endorsement of all who are acquainted with the merits of the case.

TREASURY DEPT., OFFICE OF INT. REV., WASHINGTON, April 21, 1879.

The last clause of Section 3246, Revised Statutes, as amended by Section 5 of the Act of March 1st, 1879, reads as follows, viz.:

"Nor shall any special tax be imposed upon apothecaries as to wines or spirituous liquors which they use exclusively in the preparation or making up of medicines."

This exemption extends over the entire chapter of special taxes, so that an apothecary can neither be required to pay special tax as liquor dealer for selling medicinal preparations, though spirituous liquor or wine be a component part thereof, nor be required to pay special tax as a rectifier for purifying or refining or in any manner treating liquors for use in the preparation of his medicines.

But the exemption relates only to medicinal preparation, and the apothecary therefore is not exempt from the liquor dealers' special tax if he sells unmixed distilled spirits (including pure alcohol) or wines, though he sell them strictly as medicine, and even upon a physician's prescription.

Many apothecaries, nearly all, perhaps, are compelled to hold special tax stamps as retail dealers in liquors to comply with the terms of the law, and, at the same time, meet the demands of their customers for pure liquors for medicinal purposes. The exigencies of their business also require them, as druggists, to keep pharmaceutical stills or distilling apparatus.

But under the third sub-division of Section 3244, Revised Statutes, a retail dealer in liquors who has in his possession a still, is to be regarded as a rectifier and as being engaged in the business of rectifying.

The question has therefore been presented whether an apothecary holding a special tax stamp as a retail dealer in liquor, and having in his possession a still for use in the preparation of medicinal compounds, must not be required to pay the rectifiers' tax.

After careful consideration, the conclusion is arrived at that the exemption from special tax accorded to apothecaries by that provision of the statute hereinbefore cited applies not only to the sale by them of their medicinal preparations or compounds composed in part of distilled spirits or wines, but also to any and all

mechanical appliances and processes which they may find to be necessary or useful in the preparation or making up of medicines, and that an apothecary, therefore, notwithstanding the fact of his holding a specialtax stamp as liquor dealer, is not subject to special tax as a rectifier on account of his keeping a still or distilling apparatus for use exclusively in treating liquors, etc., employed in the making up of medicines. (Signed) GREEN B. RAUM, *Commissioner.*

SIXTH DECENNIAL PHARMACOPŒIA CONVENTION.

To the several incorporated State Medical Societies, the incorporated Medical Colleges, the incorporated Colleges of Physicians and Surgeons and the incorporated Colleges of Pharmacy throughout the United States:

By virtue of authority devolved upon me as the last surviving officer of the Pharmacopœia Convention of 1870, I hereby call a general convention to meet in Washington, D. C., on the first Wednesday in May, 1880, for the purpose of revising the Pharmacopœia of the United States.

For the information and guidance of all parties interested, I refer them to the rules adopted by the Convention of 1870, to be found on page 11 of the Pharmacopœia of the United States, and request their compliance with the spirit and intention of the said rules. JAMES E. MORGAN,

No. 905 E street, N. W., Washington, D. C.

MINUTES OF THE COLLEGE.

PHILADELPHIA, March 31st, 1879.

The annual meeting of the Philadelphia College of Pharmacy was held this day at the hall of the College, No. 145 North Tenth street. Charles Bullock, First Vice-President, in the absence of the President, occupied the chair. 47 members were in attendance.

The minutes of the meeting in December, 1878, and also those of the special meeting held March 24th, were read and, on motion, adopted.

The minutes of the Board of Trustees for the months of January, February and March were also read by Mr. Bakes, Secretary of the Board, and, on motion, adopted.

These minutes refer to the change made last month relative to the proposed publication in the "Journal of Pharmacy" of the list of graduates in alphabetical order instead of in the order of merit as heretofore. Some discussion arose as to the propriety of the change. Members differing in their opinions in regard to the matter, it was, on motion, referred to the Board of Trustees for their consideration.

Messrs. Blair, Remington and Murray thought that honorable mention of those graduates who had distinguished themselves by receiving an average of "very satisfactory," should be made publicly at the Commencement, which was also referred to the Board for their consideration.

These minutes also record the resignation of Dr. Robert Bridges as Professor of Chemistry in the College.

The amendment to the by-laws of the College, which was proposed at the meeting in December last, and laid over under the rules for consideration at this meeting, was read and, on motion, adopted, as follows:

CHAPTER VIII.—ARTICLE XIII.

All such persons as from their knowledge of Materia Medica, Chemistry, Pharmacy and their collateral branches of science, shall, in the opinion of the College, merit that distinction, may be elected honorary or active members of the College.

Thomas S. Wiegand, Librarian, read his annual report, which was, on motion, accepted.

PHILADELPHIA, March 31st, 1879.

The Librarian respectfully reports that there has been added to the Library about one hundred and fifty volumes. Among these, there has been added the entire Series of the "Journal de Pharmacie et de Chimie," commencing in the year 1809, six volumes being the "Bulletin de Pharmacie," the next issue being "Journal de Pharmacie et des Sciences Accessoires," and since 1842 it has been continued as "Journal de Pharmacie et de Chimie." The exchanges have been bound as usual, and the Library can now be consulted with great advantage, as each class and each subject is arranged in its proper classification.

Joseph P. Remington, Curator, read a report which embraces the changes in the Cabinet and Museum during the year. It was, on motion, accepted.

The Curator would respectfully report that the changes and improvements authorized by the College and Board of Trustees in the distribution and re-arrangement of specimens and apparatus have been thoroughly appreciated by all who are interested in the use of these very valuable parts of the equipment of the College. The building of the new walnut cases along the western wall of the Museum, and the removal of some of the apparatus used to illustrate lectures on physics to a suitable case in the second story lecture room, have probably contributed more to the general improvement than any other change. The reception of many valuable specimens during the past year encourages the hope that it will not be long before our institution will possess the most complete collection of objects of pharmaceutical interest in this country. Space will not permit the rehearsing in detail of all of the donations to our Cabinet, but I may be permitted to call attention to the very valuable and interesting collection of Japanese drugs which have been sent out from Japan through the courtesy of Prof. S. Nagayo and H. Miyaka, of Tokio; to specimens of true damiana, Turnera aphrodisiaca; two specimens of Aplopappus; several eriodictyons and grindelias; chittem bark from Oregon, fruit of Solanum paniculatum, oil of tucuma and of batiputa, and many others of greater or lesser rarity and value. The Curator feels that the pharmaceutical meetings have assisted largely in adding specimens to the Cabinet, and takes this opportunity to appeal to members to still further increase the resources and add to the general interest by placing not only crude drugs, but pharmaceutical preparations illustrating improvements or important changes, and *this* is now of particular interest from the fact of the near approach of the revision of the Pharmacopœia of 1880. If members cannot attend the meetings personally, our Actuary, who has already given a great deal of time and interest to matters relating to the Cabinet, will be glad to receive papers and specimens, and place them on record for comparison or for permanent preservation. Such a collection, appropriately labeled and dated, would become more and more valuable as time rolls on. In thanking, on behalf of the College, the various members for their donations, the Curator would call the attention of the members particularly to the munificent gift of one hundred dollars towards preserving and protecting Cabinet specimens by one of our well-known citizens, an alumnus of this College, and one who has ever felt a great interest in assisting in the work of increasing her resources—Frederick Gutekunst, of Philadelphia.

Respectfully submitted, JOSEPH P. REMINGTON, *Curator.*

March 31st, 1879.

Prof. Remington announced the arrival of two cases of drugs for the College from Dr. Dymock, of Bombay, which have not yet been unpacked.

The following letter addressed to Charles Bullock, acknowledging the receipt of the specimens of drugs sent to Japan by the College, was read.

CENTRAL SANITARY BOARD, HOME DEPARTMENT,
TOKIO, JAPAN, March, 1879.

CHARLES BULLOCK, ESQ., 1st Vice-President of the Philadelphia College of Pharmacy, Philadelphia, Pa., U. S. A.

DEAR SIR—I duly received your letter, dated December 2d, 1878, together with bill of lading for four boxes containing specimens of American medicinal articles.

The 140 specimens (in duplicate) arrived here quite safe on the 9th of January, and I feel great pleasure to receive such complete and valuable collection from your College in exchange for the set of Japanese medicinal articles I sent you before. One set is kept in the office of the Central Sanitary Board and a duplicate was sent to the Medical Department of the Tokio University.

Please be kind enough to acknowledge the safe reception of the collection and to accept my best thanks for it.

Very respectfully yours, SENSAI NAGAYO,
Chief of the Central Sanitary Board in the Home Department of Japan.

Professor Maisch read his report as Editor of the "Journal of Pharmacy," giving many interesting facts connected therewith, some of which will be of interest to the contributors to its columns. The following is an abstract of the report:

The Editor respectfully reports that, as heretofore, the "Journal" has been regularly issued about the first of each month, with the exception of the December number, 1878, the publication of which was deferred, with the consent of the Publishing Committee, so that last year's volume might contain a report of the annual meeting of the American Pharmaceutical Association which, on account of the yellow fever, had been postponed from September to November 26th.

It was again found necessary to issue several numbers consisting almost exclusively of original essays and translations, and to increase the size of the volume closing last December, from the promised 576 to 624 pages. It is gratifying to state that, with few exceptions, the original papers contributed to the "Journal" have been republished, or translated, entirely, or in abstract, by other journals.

During the year closing with the March number, thirteen members of the College contributed to the "Journal" twenty-two papers, and there were fourty-four contributors against forty-seven during the preceding year, who are not members of the College; the contributions from this source were fifty-two.

The abstracts from theses, which the Editor deemed worthy of publication, have diminished from twenty-six during the preceding year to thirteen, a falling off of one-half.

Perhaps the time may not have arrived yet when the thesis should be considered in graduation, but in the Editor's opinion it would not be asking too much if each thesis, pretending to be based on original experimentation, should be accompanied by a full line of specimens, including the crude material and all the finished products, such specimens to be subject to verification and to be incorporated with the collections of the College.

Of the original papers published in the "Journal" twelve were read at the Pharmaceutical Meetings and at the meetings of the Alumni Association, and four before other colleges of pharmacy. Sixteen papers related to subjects of materia medica, twelve to chemistry, thirty-four to pharmacy and twelve to other subjects of interest. Forty-six authors contributed each one paper; seven each two papers; two each three papers, and two authors contributed four papers each.

Respectfully submitted, JOHN M. MAISCH, *Editor.*

The report of the Publishing Committee was read by the chairman, and was, on motion, accepted.

To the members of the Philadelphia College of Pharmacy:

The Committe respectfully report that they have attended regularly to the duties of their appointment for the year ending at this date.

The "Journal" of the College has been promptly issued on the first of each month as usual, and is, we think, a true record of the progress of Pharmaceutical Science for the period intended to be covered.

The list of subscribers has continued reasonably good, considering the long continued depression of business throughout the country, and which pharmacy has felt as much as any other occupation.

The reports of the Treasurer and of the Business Editor, which accompany this, will give in detail all the receipts and expenditures of the year.

HENRY N. RITTENHOUSE,
Chairman Publication Committee.

Philadelphia, March 31st, 1879.

The report of the Business Editor to the Publishing Committee was read for information and approved.

The Treasurer of the Committee's report, exhibiting the usual prosperous condition of this department of the College, was also read and, on motion, accepted.

Thomas S. Wiegand read a report on the condition of the sinking fund, which was of a satisfactory character. It was, on motion, accepted.

The Treasurer of the College reported the names of six members who are each five years in arrears of payment of their annual dues. In accordance with the usual custom, their names were, on motion, ordered to be stricken from the roll of members.

A communication from J. Campbell Harris, Esq., executor of the estate of the late Thomas H. Powers, acknowledging the receipt of the resolutions sent to the family of the deceased by the College, was read and directed to be recorded on the minutes.

Wm. B. Thompson alluded in fitting language to the distinguished services rendered the College for a long period of time by Dr. Robert Bridges as Professor of Chemistry, and as a member of the College; and as the minutes of the Board of Trustees which had just been read recorded his resignation as Professor of Chemistry in the College, he suggested the propriety of some action being taken by this meeting which would show in a proper manner our appreciation of his services. Mr. Thompson thought he well deserved the title of Emeritus Professor of Chemistry in the College, as a compliment for the faithful manner in which he had devoted his time and talents to its interests. Professor Remington and others coincided with this opinion, and, on motion, the following preamble and resolution were unanimously adopted, and referred to the Board of Trustees to carry into effect:

"WHEREAS, Dr. Robert Bridges, Professor of Chemistry, on account of failing health, presented his resignation at the last meeting of the Board of Trustees of the College;

"*Resolved*, That the Philadelphia College of Pharmacy, in accepting the resignation, desire to testify their sense of regret at their loss, and it is therefore

"*Resolved*, That the title of Emeritus Professor of Chemistry be conferred upon Dr. Robert Bridges by this College, expressive of our regard for one who has labored so faithfully for the best interests of this institution."

Daniel S. Jones alluded to the illness of the President of the College at the present time, and offered the following resolution, which was unanimously adopted:

"*Resolved*, That this meeting learns with sincere regret of the illness of our esteemed President, Dillwyn Parrish, and hereby tenders our expression of sympathy, with the earnest hope for his early and permanent recovery."

Professor Remington, on behalf of the Committee on Deceased Members, called attention to the death of Dr. George B. Wood, which occurred on the 30th inst., and alluded to the fact of his having filled a professor's chair in this College from 1822, when the College was incorporated, until 1835. His interest in the College was always great, and did not abate when he was called to fill the chair of Materia

Medica in the University of Pennsylvania. Professor Remington moved that a committee of three be appointed by the chair to prepare suitable resolutions for the occasion, and report at an adjourned meeting to be held on Monday, the 7th inst., at 4 o'clock P. M. The motion was adopted, and the Chair appointed Messrs. Alfred B Taylor, Joseph P. Remington and Daniel S. Jones the committee.

Professor Maisch called the attention of the meeting to the death of Dr. Jacob Bigelow, of Boston, and of F. L. M. Dorvault, of Paris, the former an honorary and the latter a corresponding member of the College. Dr. Bigelow died in Boston on the 10th of January, 1879, aged ninety-one years, and is widely and honorably known as the author of the "American Medical Botany" which bears his name.

Professor Remington, on behalf of the Committee on Deceased Members, gave notice of the death of Christopher Henry Kolp, Ph.G., who died in Philadelphia, Pa., Feb. 11th, 1879, in the 29th year of his age. He was a graduate of the Philadelphia College of Pharmacy, of the class of 1869, an active member of the College, of the Alumni Association, also of the American Pharmaceutical Association. He was engaged in the retail drug business in Philadelphia at the time of his death, which was sudden and unexpected to his many friends.

This being the annual meeting, an election for officers, trustees and the standing committees was ordered.

The Chair appointed Messrs. Wm. B. Thompson and Alfred Mellor tellers, who upon counting the vote announced the following gentlemen elected to the respective positions enumerated below, viz :

President—Dillwyn Parrish.
First Vice President—Charles Bullock.
Second Vice President—Robert Shoemaker.
Treasurer—Samuel S. Bunting.
Recording Secretary—William J. Jenks.
Corresponding Secretary—Alfred B. Taylor.
Board of Trustees—for one year—John M. Maisch, Daniel S. Jones, Andrew Blair; for two years—Joseph P. Remington, T. Morris Perot, James T. Shinn; for three years—Dr. Robert Bridges, Thomas S. Wiegand, William B. Webb.
Publication Committee—John M. Maisch, Henry N. Rittenhouse, Thomas S. Wiegand, James T. Shinn, Charles Bullock.
Sinking Fund Committee—Thomas S. Wiegand, T. Morris Perot, James T. Shinn.
Editor—John M. Maisch.
Librarian—Thomas S. Wiegand.
Curator—Joseph P. Remington.

There being no further business, then, on motion, adjourned to meet at the hall on Monday, April 7th, 1879, at 4 o'clock P.M. WM. J. JENKS, *Secretary.*

PHILADELPHIA, April 7th, 1878.

An adjourned meeting of the Philadelphia College of Pharmacy was held this day at the hall, Charles Bullock, Vice-President, in the chair; twelve members present.

The meeting convened pursuant to adjournment to hear the report of the committee appointed on the 30th ultimo to draft resolutions expressive of the sentiments of the members of the College, relative to the death of our esteemed fellow member, Dr. George B. Wood

Joseph P. Remington, on behalf of his colleagues, read the following resolution and memoir, which the committee had prepared:

"WHEREAS, The Philadelphia College of Pharmacy have learned, with feelings of sorrow and regret, of the death of our esteemed and greatly honored member, Professor George B. Wood, M. D., and although the memory of his great services to the cause of pharmacy cannot be readily effaced, we still desire to record our sense of the loss which has been sustained by his death; and, whereas, it is fit and proper that the actions, character and services of the illustrious dead should be portrayed and commemorated, and, whereas, we wish to put on record an expression of our sense of the great private worth which characterized our late fellow member, no less than his public virtues,

"*Resolved*, That in the death of Dr. George B. Wood, the College of Pharmacy has lost one of its most revered and distinguished members; the pharmaceutical profession one of its most hearty and earnest well wishers; the profession of medicine one of its most able leaders; our country one of its most celebrated authors, and the world one of its TRULY GREAT MEN.

"Whilst it is not the intention of your committee to rehearse, at length, the services of this remarkably laborious author (as able writers have already in hand the preparation of a suitable biography), it would seem proper to bring to the recollection of his fellow members some of the more prominent points in connection with his interest in our college and the pharmaceutical profession.

"The chair of chemistry was first occupied in the College of Pharmacy by Gerard Troost, M. D., who served from 1821 to 1822.

"He was succeeded by Dr. George B. Wood in 1822, who held the chair until 1831, when on the death of Dr. Benjamin Ellis he was elected Professor of Materia Medica and Pharmacy; this position he held until 1835, when he resigned to accept the Professorship of Materia Medica and Pharmacy in the University of Pennsylvania.

"It was during his official connection with the Philadelphia College of Pharmacy that the "United States Dispensatory" first saw light, and the title page of the first edition of the most successful work of the kind the country has ever seen bears the following imprint:

"'The Dispensatory of the United States of America.' By George B. Wood, M. D., Professor of Materia Medica and Pharmacy in the Philadelphia College of Pharmacy, member of the American Philosophical Society, etc., etc., and Franklin Bache, M. D., Professor of Chemistry in the Philadelphia College of Pharmacy, one of the Secretaries of the American Philosophical Society, etc., etc. 1833.

"In the preface, in setting forth the reasons for publishing this work, these words occur:

"It appears due to our national character that such a work should be in good faith an American work, newly prepared in all its parts, and not a mere edition of one of the European dispensatories, with here and there additions and alterations which, though they may be useful in themselves, cannot be made to harmonize with the other materials so as to give to the whole an appearance of unity, and certainly would not justify the assumption of a new and national title for the book. The

authors may be permitted to observe, in relation to themselves, that they have expended much time and labor in the preparation of the work; have sought diligently for facts from every readily accessible source; have endeavored by a comparison of authorities and a close scrutiny of evidence to ascertain the truth, whenever practicable, and have exerted themselves to the extent of their abilities to render the 'Dispensatory' worthy of public approbation both for the quality and quantity of its contents and the general accuracy of its statements.

"The immense sale that this work has enjoyed for forty-six years is the best proof as to how far these aspirations were realized.

"Whilst holding the chair of Materia Medica and Pharmacy in our College, he was appointed delegate to the first convention held for revising the United States Pharmacopœia, and thus was begun a connection which lasted for four decades and through five revisions. A notable incident occurred in connection with the labors of the Revision Committee of 1840; this committee had prepared their report and it was ready by October, 1840, but concluded to defer all action until the Philadelphia College of Pharmacy should present their report; this communication was sent to them near the end of the year 1841, and the preface to the Pharmacopœia of 1840 refers to it as folllows: A committee of that body (the College of Phamacy), charged with the work of revision, had, in the mean time, been zealously engaged in prosecuting the object of their appointment, and the result of their labors having received the sanction of the College, was transmitted to the committee of the convention. This contribution from the Philadelphia College of Pharmacy consisted of a revised copy of the Pharmacopœia, elaborated with ability and great industry, and presenting, along with numerous individual additions and alterations, some new features in the general plan. It, therefore, required close attention and deliberate examination on the part of the committee, who found themselves under the necessity of going over the whole ground which they had recently traversed. This caused a delay in the publication of over a year.

"From that time invitations were regularly issued to colleges of pharmacy to send delegates to the Revision Convention, and amongst all of the physicians who served upon the revision committees, none were found who appreciated to a greater extent the services of the pharmaceutical section than Dr. George B. Wood.

"In May, 1850, he was transferred to the Professorship of Theory and Practice of Medicine, to take the place formerly held by Dr. Chapman. He held this position until 1860, when he resigned and was appointed Emeritus Professor, since which time his labors have been principally confined to revising his works and in managing his property, which gradually assumed larger and larger proportions.

"Although removed of late years by failing health from active interest and participation in the affairs of our college, he was ever ready to lend a listening ear when improvements were suggested, and assist in many ways by substantial aid.

"The 30th day of March, 1879, is an eventful one in the annals of pharmacy, marking, as it does, the closing of the earthly career of one whose name has ever been a tower of strength in both the medical and pharmaceutical professions.

"Signed, on behalf of committee,

"A. B. Taylor,
"Joseph P. Remington,
"Daniel S. Jones."

On motion of Mr. Wiegand the resolutions were unanimously accepted.

Charles Bullock called the attention of the members to the fact that, in the year 1838, Edward B. Garrigues, one of the original members of the College, had tendered his resignation as a member, in consequence of his discontinuance of the drug business, and that the same had been accepted; but as Mr. Garrigues was now again in the business, and one of the founders of the College (of which there are but three now living), Mr. Bullock thought that he ought to be again a member, and, therefore, moved that the resignation of Edward B. Garrigues be reconsidered and that he be reinstated a member of the College with all the rights and privileges of membership.

The motion was seconded by Joseph P. Remington, and, after being united with by a number of others, was unanimously adopted.

Then, on motion, adjourned.

WILLIAM J. JENKS, *Secretary.*

MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, March 18th, 1879.

In the absence of the President, Mr. Gaillard was called to the chair. The minutes of the last meeting were read, and the Registrar noted the fact that there was no record of the remarks of Mr. C. W. Hancock upon a variety of orange now grown in Florida, which is much prized for its flavor and possesses also the peculiarity of separating into the various divisions which are natural to it without any rupture of the different sections occurring, thus being eminently adapted to use on occasions where dress must be considered.

Mr. Gaillard presented for the Secretary a copy of Paris' "Pharmacologia," Thatcher's "Dispensatory" and Dr. Benj. Smith Barton's treatise on "Materia Medica."

The Registrar presented to the College, on behalf of the Smithsonian Institute, the volume of the report for 1877 and three volumes of miscellaneous contributions of the Institution. The Registrar was directed to return the thanks of the College for the same.

Justus Liebig's treatise on "Organic Chemistry," in three volumes octavo, was presented to the library by the Registrar.

Dr. R. V. Mattison read a paper upon *opium smoking* as practiced in the Chinese quarter of San Francisco. The paper was referred to the publication committee. During the reading of the paper a pipe such as is used in smoking was exhibited, and in the discussion that ensued it was stated that as much as 420 grains of a soft extract of opium were used in one session of seven to nine hours.

Mr. Charles L. Mitchell exhibited specimens of *purified tallow*, which, for

many uses in pharmacy, he had found to be very desirable. The same gentleman also exhibited medicated *gelatin cylinders* for treating diseases of the ear. These as first introduced to the notice of the medical profession by Dr. Joseph Gruber, of Vienna, were of an almond shape, but, consequently, could only be introduced in one way, and that sometimes was a cause of unnecessary pain, while the cylindrical form permitted their introduction in any way convenient. *Vaginal suppositories* of gelatin were also exhibited. These were hollow and contained cotton, which prevented the medicating components from flowing away. Gelatin cylinders, similarly prepared and medicated, having a piece of silk thread attached to them to prevent their displacement, were exhibited and their use in treating diseases of the nasal fossæ explained. All of these appliances have been used with great satisfaction in the Jefferson Medical College clinics.

The question of the propriety and legality of the special patent medicine tax of Pennsylvania was brought before the attention of the meeting, and it was thought that, as it was a matter which concerned the great body of the trade at large, if a meeting of the druggists should be called, it would be generally responded to; the discussion was widened, and the question of the United States alcohol tax was introduced as unjust, but the Internal Revenue Commissioner, in his interview with a committee of the American Pharmaceutical Association some years ago, had shown that it would be impossible to frame a different law without giving permission to large numbers to open stores under the guise of pharmacies which would be only liquor saloons.

Prof. Sadtler alluded to *uranine* which was exhibited at the last meeting. Since then he learned that Prof. Remsen, of Baltimore, had analyzed this substance, and found it to consist of a sodium compound of resorcin-phthalein (fluorescein). The following structural formulas explain the composition of phenol, and of the several derivatives alluded to:

C_6H_5—OH Phenol.

$C_6H_4<^{OH}_{OH}$ Resorcin.

$C_6H_4<^{COOH}_{COOH}$ Phthalic Acid.

$C_6H_4<^{CO}_{CO}>O$ Phthalic Anhydrid.

$C_6H_4<^{CO.C_6H_4OH}_{CO.C_6H_4OH}$ Phenol-Phthalein.

$C_6H_4<^{CO.C_6H_3<^{OH}}_{CO.C_6H_3<^{OH}}{}^{O}$ Resorcin-Phthalein (Fluorescein).

Two *gas stoves*, made by the Buffalo Dental Manufacturing Company, were exhibited. By simple changes, very great variations in temperature were attainable; one of them, by aid of small bellows worked by the foot, was capable of fusing several ounces of cast iron in a short time.

Prof. Sadtler described a *safety gas stove* he had constructed, somewhat after the plan described some years since in "Silliman's Journal," by means of which ether, benzin or even gasolin could be distilled with safety; but he cautioned the members

present not to distill carbon disulphide, as the sulphur would deposit in the wire gauze and burn, from which the vapors of the liquid would ignite.

There being no further business, the meeting adjourned.

T. S. WIEGAND, *Registrar.*

PHILADELPHIA, April 15th, 1879.

In the absence of the President, who has been confined to the house by serious illness, Mr. Wm. McIntyre was called to the chair. The minutes of the last meeting were read and approved.

Prof. Maisch presented a copy of the National Dispensatory for the Library, and for the Cabinet a remarkably fine specimen of *Angostura bark*, which had been sent to him by Messrs. Lehn & Fink, of New York. Its unusually fine quality at first raised doubts as to its authenticity, but close inspection and microscopic examination proved it to be genuine; it is in long quills and curved pieces, nearly all of which have the whitish soft and and almost mealy cork attached; its appearance indicates that it has been dried and preserved with the utmost care.

Prof. Remington exhibited an *improved distillatory apparatus* in full operation, which was highly approved of by those present; a written description of it may be found on page 225.

Mr. H. C. Archibald exhibited the improved *apparatus for making suppositories* without fusing the ingredients together, thus rendering the dispensing of suppositories, even in warm weather, an easy matter, an inexperienced person, even, being able to turn out a dozen suppositories in less than ten minutes. It was stated that the apparatus had been tested by a number of persons who had given it their approval. A full description may be found in the April number of the "Journal," page 184.

Some discussion took place as to the best method for preparing suppositories, and the usual difference of opinion was noticed, some members preferring to make them by fusion, others by the cold process. Mr. McIntyre stated that he had followed Mr. Archibald's plan for some years, using a dividing mould and pressing the mixed material by means of a cork, instead of a plunger.

At the pharmaceutical meeting in February Prof. Maisch alluded to what is called *Chinese rice paper*. In further illustration of this subject, Dr. F. V. Greene, U.S.N., had sent a specimen of Chinese art, consisting of paintings upon this kind of paper; accompanying it was a note descriptive of the plant, and drawings illustrating the position of the pith in the stem, the external markings from the pressure of the woody fibre, and the lenticular cavities found in the centre of some specimens.

Prof. Maisch asked if any of the members were aware of the wood of the root of *Nyssa* being used to make tents for surgical purposes in place of the *Laminaria digitata*, and exhibited specimens of the wood of the root of *Nyssa uniflora and N. multiflora*, which were sent by Messrs. Wallace Bros., of Statesville, N. C.

Mr. Biddle exhibited a specimen of leaves sold in large quantity as *Jaborandi*, which attracted attention by their odor, and examination showed them to be laurel leaves (*Laurus nobilis*).

There being no further business, on motion, the meeting adjourned.

T. S. WIEGAND, *Registrar.*

PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

Philudelphia College of Pharmacy.—The chair of chemistry made vacant by the resignation of Prof. Bridges has been filled by the Board of Trustees by the unanimous election of Prof. Samuel P. Sadtler, of the University of Pennsylvania. Prof. Sadtler is a native of Pennsylvania, and studied chemistry at the Lehigh University, at Yale College, and at Heidelberg, Germany. After his return to this country, he was for three years Professor of Chemistry at Gettysburg College, when he was called to the scientific department of the University of Pennsylvania. During the past winter he has been assisting Prof. Bridges, and lectured to the junior class of the Philadelphia College of Pharmacy on physics and the non-metallic elements, and to the senior class on organic chemistry. He brings to his new position a large amount of practical experience in the laboratory and lecture-room; he is the author of a very valuable work entitled "Chemical Experimentation," and is the American editor of the latest edition of Attfield's "Chemistry."

Massachusetts College of Pharmacy.—The twelfth annual commencement was held at the College Hall, April 23d. The degree of Graduate in Pharmacy was conferred upon the following gentlemen:

Thomas Trefethen Goodale (*Malt Extract*), Francis Mason Harris (*Pepper*), Edward Mark Lowell (*Monobromated Camphor*), Edgar Henry Luce (*Purified Animal Charcoal*), John Alexander McDonald (*Sweet Spirit of Nitre*), Charles Naylor (*Caffeina*), William Herbert Pierce (*Purified Aloes*), Francis Alexander Schouler (*Fluid Extract of Podophyllum*), Charles William Wells (*Goa Powder*).

An andress on the late Prof. J. M. Merrick was delivered by Prof Markoe, and valedictory addresses by Mr. Thos. Doliber on behalf of the faculty, and by Mr. T. T. Goodale on behalf of the class.

Pharmacy in Rhode Island.—The State Board of Pharmacy, in their ninth annual report to the General Assembly, regret that in the condition of pharmacy there has been little of progress or improvement in the past year. The general business depression has been severely felt by the pharmacists, and their time and thought have been occupied at the counter rather than in the study and experiments of the laboratory. The Board state that during the year six persons applied for registration as pharmacists, only one of whom gave satisfactory evidence of his qualifications for registration. These applicants were men who had not been in the business or had wasted their time as assistant pharmacists in States where there was no regular apprenticeship required by law, and, consequently, were deficient in the practical knowledge of pharmacy which can only be obtained by study and earnest application. Twenty persons applied for registration as assistant pharmacists, fourteen of whom passed the examination and were duly registered. The remaining six were remanded to their studies. The Board remark that many of the disappointed applicants for registration and their friends complained that the examinations were too rigid. The Board, however, believe that they have placed the standard of efficiency where it could be easily attained by a proper use of the term of apprenticeship.

Although the examinations were not so rigid as those required by the colleges, yet they were such as would warrant to the citizens a safe dispensing of medicines. The Board commends the action of the Rhode Island Medical Society in deciding to adopt the metric system of weights and measures after Jan. 1st, 1880. The Pharmaceutical Association, they say, had adopted a resolution to co-operate with the doctors in the matter, and hereafter the Board would require a knowledge of the system by all applicants for registration.

New York Pharmaceutical Association.—We are pleased to learn that during the present month, May 21st, the initiatory meeting will be held at Utica. We hope that the new association will at once be established upon a firm basis.

Pennsylvania Pharmaceutical Association.—As will be seen from the announcement on page 11 of our advertising sheet, the second annual meeting will take place in Pittsburg, on the second Tuesday of June. All who desire to become members should address the Chairman of the Executive Committee, Chas. Cressler, Chambersburg, Pa.

Maryland College of Pharmacy.—The twenty-seventh annual commencement was held at the Academy of Music, Baltimore, on the evening of March 24th.

National College of Pharmacy at Washington, D. C.—The annual meeting of the National College of Pharmacy was held April 7th, at the lecture-hall of the College, with a good attendance of its members. The address of the retiring President, Mr. John A. Milburn, reviewed the progress made during the year in a very able and interesting manner, and was full of valuable suggestions for the future. The reports of the Secretary, Treasurer and the various committees showed the College to be in a prosperous condition, and that the institution had become self-sustaining.

The election of officers for the ensuing collegiate year resulted in the choice of Messrs. J. D. O'Connell as President, John R. Major and G. G. C. Simms as Vice-Presidents, Chas. Becker as Secretary, W. G. Duckett as Treasurer, and Karl Kullberg, J. S. Jones, J. W. Drew, R. B. Ferguson, Z. W. Cromwell, John A. Milburn and W. S. Thompson as additional Trustees.

The graduates who successfully passed the examination and received the degree of the College are Messrs. S. W. Bower, Nelson Head, H. W. Hodges, T. A. T. Judd, Harry Standiford and W. E. Shaffer.

Chicago College of Pharmacy.—At the annual meeting, held April 1st, the institution was reported in a flourishing condition. The regular examinations have been held, and sixteen candidates have passed them with credit. The following officers were elected for the ensuing year: President, Prof. C. G. Wheeler; Vice-Presidents, George Buck and Prof. F. M. Goodman; Recording Secretary, G. H. Ackerman; Corresponding Secretary, H. Biroth; Treasurer, A. G. Vogeler; and the following Board of Trustees: Messrs. Sargent, Whitfield, Mills, Jacobus, Borland, Bartlett, Cowdrey, Coffin, Somers and Harting

Cincinnati College of Pharmacy.—The annual commencement took place at College Hall, on the evening of March 19th. The degree of Graduate in Pharmacy was conferred on thirteen candidates. An address was delivered by Judge Jos. Cox. Prof. Judge delivered the valedictory address on behalf of the faculty, and Mr. J. M. Long on behalf of the class.

Pharmaceutical Society of Great Britian.—At the Pharmaceutical meeting held February 5th, President John Williams in the chair, Mr. E. M. Holmes read a paper on *Myrtus Chekan*, Spreng., an evergreen shrub of Chili, the oval-lanceolate and entire leaves of which have recently been sent to London; they have an aromatic, pungent, slightly bitter and astringent taste, and are considered by Dr. Dessauer, of Valparaiso, to possess tonic, expectorant, diuretic and antiseptic properties, and to be particularly useful in cases of bronchitis, catarrh of the bladder and other affections of the mucous membranes.

Mr. William A. Tilden read a paper on *distilled oil of lemon*. The oil had been prepared by Mr. John Moss, and on examination proved to consist, 1, of a terpene, $C_{10}H_{16}$, boiling below 160°C., a small qnantity; 2, of a terpene called citrene, boiling at 176°, the chief constituent; 3, of an oxygenated substance of alcoholic properties, probably formed by the combination of one of the hydrocarbons with the elements of water; and 4, of minute quantities of several less important substances which do not contribute appreciably to the fragrance of the oil, this being chiefly due to the association of the first three principles. In the discussion following the reading of the paper surprise was expressed at the statement that this distilled oil was superior in odor to that ordinarily obtained.

At the pharmaceutical meeting held March 5th two papers, by W. R. Dunstan and A. F. Dimmock, were read. One of the papers treats of the *estimation of diastase*, which the authors effect by ascertaining the amount required for completely converting the jelly of a given weight of starch into maltose and dextrin, by maceration for three hours at a temperature not exceeding 120°F. The second paper gave the results of an examination of 14 samples of *extract of malt*, the variation of which is shown by the following figures: Water, 19·0 to 86·3; ash, 0·3 to 1·6; maltose, 4·6 to 59·0; dextrin, 2·5 to 9·8; albumenoids, 0·5 to 8·2; phosphates, as phosphoric pentoxide, — to 0·6. One sample contained 4·1 per cent. of alcohol, and of three samples, 17·3, 29·0 and 34·0 grams were required to convert one gram of starch; the remaining samples did not affect starch.

EDITORIAL DEPARTMENT.

Adulteration of Food and Medicine.—Of the various products which are subject to adulterations and sophistications, to a greater or less extent, those which are used for food or medicines are doubtless of greatest importance, for obvious reasons; not so much, perhaps, on account of the dangerous qualities of the diluents and

adulterants, but because the nutritive or the medicinal value of the articles are thereby reduced. Adulterations and sophistications emanate chiefly from two causes; on the one hand it is the sordid desire of rapid pecuniary gain, and on the other hand, the wish to meet the demand of the consumer for cheap goods. In these respects we believe that the people of the United States fare no better and no worse than the inhabitants of other countries; but in the legal protection of the public against such frauds, there is doubtless room for improvement, if we consider that the only remedy of the victim is at common law, with its expensiveness, delays and uncertain results, since the conviction and punishment of the offender would largely depend upon the amount of *damage* done to the purchaser by the adulterated article. That legal enactments are desirable, covering such offences, and providing for their adequate punishment, with the view of lessening, if not eradicating the evil, we believe few will dispute; the difficulty is rather in the drafting of a law which may be readily carried into effect, and which should be free from those uncertainties and other objections that have been experienced in the "Sale of Food and Drugs Act," of 1875, of Great Britain. For such purposes a law for the United States is evidently inadmissible, and it remains for the different States to make such enactments as may be deemed proper.

Such a plan—it is called a "rough draft" by its author—has been proposed by Dr. E. R. Squibb, at the recent meeting of the Medical Society of the State of New York, and has been published in pamphlet form by G. P. Putnam's Sons, New York, as No. xiv of the serial entitled "Economic Monographs." The proposed law defines the terms "food" and "medicine," lays down the standards by which adulterations shall be judged, and then explains the different kinds of offences regarded as adulterations. The proposed penalties are a fine not exceeding $200 for the first offence, and imprisonment with hard labor not exceeding six months for subsequent offences. The organization of a State Board of Health is contemplated, which is to be composed of two physicians, one chemist and physicist, and one lawyer, to be appointed from nominations made by the proper societies. This board is to select, by competitive examination, a Board of Inspectors of Food and Medicine, consisting of not less than one for each half million of inhabitants, and also a Board of Prosecution, consisting of not less than four persons, for the State of New York. The inspectors are required to examine weekly not less than ten articles, and for a moderate charge, all complaints of suspected adulterations. The salaries are proposed as follows: President of the State Board of Health, $3,000, other members, $2,000 per year; deductions to be made for all inattentions to their prescribed duties. The members of the boards of inspectors and of prosecution are to receive an annual salary of $4,000, provided that they shall be prohibited from entering into any other business or occupation, and that no other compensation of any kind whatever shall be received by them. All fines and moneys received are to be paid into the State treasury.

The "rough draft," of which we have given in brief only the features for its execution, is well adapted for inviting the careful consideration of all interested in the suppression of adulterations; it certainly appears to be one way by which that desirable end may be reached, and with some modifications might be adapted to other

States. In our opinion, the duties of the State Board of Health might advantageously be extended to all the important sanitary interests of the State, as indicated by the author in a note appended to the "draft." In such an event, it would doubtless be desirable to modify the formation of the board so as to give a fair representation to those whose interests might naturally fall to its supervision.

The pamphlet contains also a copy of the British law of 1875.

The introduction of the metric system, we believe, is merely a question of time, and since the experiment of its practical introduction into the United States Marine Hospital Service has been successfully made, there seems to be a greater incentive for its more general use by physicians and pharmacists. The rules elaborated by Prof. Oldberg, to which we have referred on a previous occasion ("Amer. Jour. Phar.," 1878, p. 365), are so simple as to be easily comprehended and remembered, and may be practically used without difficulty or serious inconvenience. Several medical journals published in the United States are now using the metric system to the entire exclusion of the old apothecaries' weights and measures, and several medical associations require its use in all communications presented to them. For the introduction of the system into medicine at the present time, the initiatory steps probably rest with the medical profession, who may prescribe in the metric system and require the prescriptions to be thus properly compounded. But the pharmacists may very materially further the movement, not only by procuring the necessary implements, but also by directing the attention of physicians to the simplicity of the system, and by practically employing it in all those officinal preparations in which it may be used with advantage.

From "metric notes" received a short time ago we learn that, among others, the following propositions have recently been before the Medical Society of the County of New York:

"*Resolved*, That the metric system shall henceforth be used in the minutes of this Society, and in all the papers published under its authority.

"*Resolved*, That the Medical Society of the County of New York request the Medical Boards of the Hospitals and Dispensaries to adopt the Metric System in prescribing, and that the Faculties of the Medical Colleges be also requested to order its adoption in their didactic and clinical departments."

The society invites the co-operation of kindred societies interested in the movement, and has for this purpose appointed a Committee on the Metric System, consisting of Drs. E. Seguin, M. D. Mann and T. A. McBride, to whom communications may be addressed.

We would also invite contributors to the "Journal" to employ the metric system in formulas and other communications wherever practicable.

A Call For Help.—The following letter has been received from the President of the Pharmaceutical Society in Hungary:

The dreadful deluge of the river Theiss has destroyed all the country bordering its shores in lower Hungary, with Szegedin, the second town of the kingdom, and

many other smaller places like Dorozsma, Algyö, Táysé. Nine chemists' shops were destroyed by the flood.

According to telegraphic despatches from the burgermaster of Szegedin only two pharmaceutical chemists, out of eight formerly existing in this town, are in proper condition to answer the numerous calls for physics.

The former possessors of their once flourishing, now totally destroyed, business, have been temporarily provided with articles the most necessary (thanks to the liberal charitable collections of the whole country), but they are in the most extreme need of help for the re-opening of their shops. To lend a willing hand towards this duty is keenly felt by the Board of the United Pharmaceutical Societies in Hungary; each of those have done their duty to the extent of their ability. However, the misery is so great that, although the chemists of our country do help with all their force, it is not enough for the suffering occasioned. The Board of the United Pharmaceutical Societies in Hungary, therefore, most fervently request the kind help of their profession elsewhere for our poor ruined brothers in Hungary, and trust not to do so in vain, as the evidence of English Christian charity is known all over the world.

Contributions of any kind, in money or in physics, will be most thankfully received by Your thankful Colleague,

GUSTAV JARMAY,
Pharmaceutical Chemist in Budapest, Hungary, and President of the Pharmaceutical Society in Hungary.

Contributions for the relief of the sufferers by the flood in Hungary will be received by H. H. Wolle, Business Editor of this Journal, and forwarded to the President of the Pharmaceutical Society in Hungary.

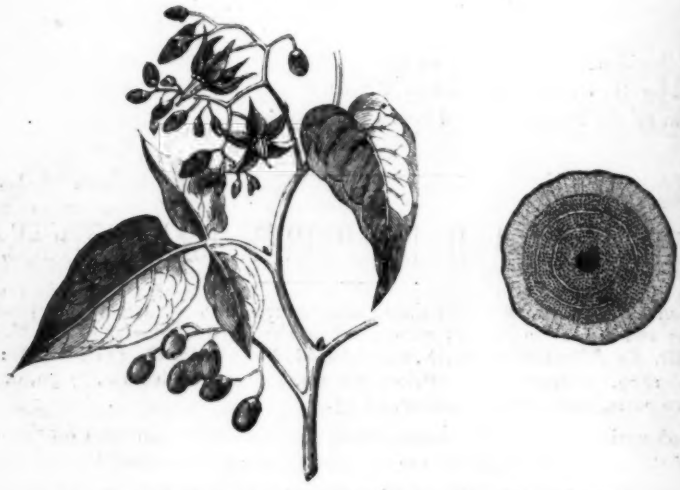
REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The National Dispensatory, containing the natural history, chemistry, pharmacy, action and uses of medicines recognized in the Pharmacopœias of the U. S. and Gr. Br. By Alfred Stillé, M.D, and John M. Maisch, Ph D. Philadelphia: H. C. Lea. 1879. 8vo, pp. 1628. Price, in cloth, $6.75, or in leather, $7.50, or bound in two parts, cloth, $7.00, leather, $8.25.

The American pharmacists have looked with an anxious interest for the appearance of this work, the result of the conjoined labors of men of known repute as writers in their respective fields of therapeutics and pharmacy. This is not surprising, considering that since the last fifteen years they have been almost left without a guide to which they could refer when confronted by one of the multitude of new subjects which have appeared in the course of the rapid progress of science made during that time with their claims as remedial agents. To gain the necessary information about them involved a search through a voluminous periodical literature, a task difficult for all and impossible for many. To meet the wants of the pharmacist and the physician of the present day in a "manner concise and complete by a work of reference to which the inquirer might turn with the certainty of finding everything which experience has stored up as worthy of confidence in connection with pharmacy, the action and uses of medicines," was the aim of the authors. It cannot be our object to give a full critical account of a work of such a wide scope

in our attempt of a condensed review of the plan upon which it has been constructed and the manner in which the overwhelming mass of matter has been digested and made available. We intend to draw the attention of our brother pharmacists to this publication, which cannot fail to exercise a wide-spread and marked influence upon the discharge of the duties of their vocation. It is from this standpoint that we shall endeavor to enable the reader to form an idea of how the authors have succeeded in their arduous task.

The material embodied in the work is truly immense, as shown alone by the almost countless number of subjects treated. All of the officinal crude drugs, pharmaceutical preparations and chemicals recognized by the U. S. P. and B. P. are fully considered, and also those of the G. Ph., and many of the French Codex are mentioned to a greater or less extent. The number of unofficinal articles treated of is very large, receiving in every case that attention deserved by their interest in connection with pharmacy and medicine. The many new articles which have been brought to notice as remedial agents within the last ten or fifteen years are embodied, with a



SOLANUM DULCAMARA, Lin. Branch and section of stem.

due consideration of their already established or promised merit. Each article is headed by the Latin name, if officinal, as adopted by the U. S. P. and B. Ph., followed by Latin synonyms employed in the different standard works or used by earlier writers, also the French and German names and proper English appellations. The natural history, chemical properties and uses are treated under the separate headings of Origin, Description, Properties, Constituents, Composition, Impurities, Adulterations, Uses in Pharmacy and Medicine, and closing with a consideration of the doses in which the drug is administered.

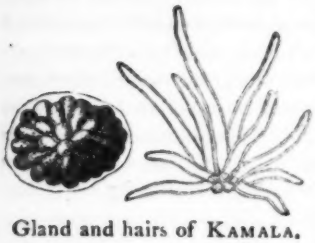
Turning our attention to the crude drugs, and more particularly to those derived from the vegetable kingdom as the most important, we find after a brief description of the drug and name of the natural order whence it is derived, under the head of Origin a concise description of the plant from which it is obtained, the mode of production, the general appearance as found in the market, followed by an account of all the different varieties of the same article as produced in different localities as commonly met with in commerce. Detailed botanical descriptions of the plants have been omitted, thus giving more space for the introduction of a new feature headed Descriptions, where are found detailed exhibits of the striking characteristics of the drug, heretofore greatly missed in all the works of reference generally at the disposal of the pharmacist. These pharmacognostic-diagnoses, founded upon the external appearances resulting from peculiar morphological features and peculiarities of structure characteristic of each drug, and by these readily distinguished from every other, however nearly allied, afford thus the means for their identification. Here, to aid the reader, many of these descriptions are illustrated by well-executed figures, either of the full plant in flower, as, for example, in the case of

Transverse sections of Russian, Chinese and European RHUBARB.

Aristolochia serpentaria, Hyoscyamus, Dulcamara and Colchicum, or of the drug itself as found in the market, as excellently shown in the representation of the different kinds of cinchona barks and the sarsaparillas, rhubarbs and numerous other roots and barks, of which sections are given as seen under the magnifying power of the lense or compound microscope to show their structural features or histological character, as in Lycopodium, Rottlera and Calisaya bark.

It is with regret that we do not find similar instructive illustrations more frequently attached to the drugs derived from our indigenous plants which we have found oftener subjected to falsifications, designedly or through ignorance and

want of care, and with whose characteristics the druggist, pharmacist and manufacturer seems to be less acquainted than with the majority of drugs of foreign origin.



Gland and hairs of KAMALA.

We would gladly dwell upon some of the articles which have particularly attracted our attention, but want of space deters us, though we cannot leave the subject without referring to the masterly manner in which, under the article of Cinchona, the intricacies of quinology are unraveled before the reader, at once lucid and comprehensive, embracing the results of the latest researches.

Under the heading Constituents, a critical account of the proximate principles, wherever such is recognized, from the time of their discovery to the present state of our knowledge, is given. The difficulties arising from the encounter of conflicting statements of facts, the differences of views in regard to the composition of many of these compounds, the doubts surrounding their identity and the uncertainty about the role assigned them as the active agents, upon which the physiological effects of the drug depend, rendered this task a most formidable one. Any one consulting, say the article Ergot, or the chemical constitution of cinchona bark, or of opium, will not fail to admit that the task has been indeed successfully accomplished in the light of the rapid strides of progress made in organic chemistry during the last ten years.

Under the heading Allied Drugs, a number of substances not deemed of sufficient interest to require separate articles, are briefly described in connection with those of greater importance, to which they are allied either by origin, natural affinities or analogous uses. Under adulterations, an accurate description is given of the substances which serve as adulterants or are found as incidental admixtures, as, for example, in the case of senna, with the means pointed out for their detection, in aid of which, in some cases, figures are added.

Considering the pharmaceutical and chemical preparations, we find the processes for those officinal in the United States and British Pharmacopœias literally given as laid down in those works, besides others employed in different methods of preparation, with critical remarks, particularly valuable to those who find it a duty or an economical advantage to prepare many of these products themselves. The needs of the working pharmacist, in that respect, have been kept constantly in view by the authors. This appears evident from the manner in which the explanation of the processes and the directions for the manipulations involved are given with the description of apparatus and utensils, which are frequently accompanied by illustrations. In that respect our attention was particularly attracted in looking over the articles, Extracta and Ext. Fluida. We may safely assert that many, after finding themselves so clearly and concisely instructed in the preparation of the products belonging to these important groups, will find themselves induced to bestow their time and care upon them, and thus secure the surest guarantee for dispensing articles of unexceptionable quality and the desired uniformity. It is not to be expected to find room given to the large number of extra officinal preparations, and of that class which parade

as novelties in the list of manufacturers, and mostly with doubtful or not sufficiently established claims, but there are several of the preparations, which we miss, as having sufficient confidence of the medical profession to be frequently prescribed and for which one naturally would look in a book of reference, like the one under consideration, as *e. g.*, fluid extracts of Triticum repens, Viburnum prunifolium, Hamamelis, Oenothera, Grindelia, of some of which, however, brief mention is made under the head of the respective crude drugs. To the formulas of the tinctures and other galenical preparations are invariably added those of the G.Ph., and often those of Fr. Codex, with comparison of strength of the more heroic remedies.

Under the heading Liquores, we find inserted, whenever of importance, the tables showing relation between Sp. Gr. and per cent. of dissolved matter in the solution. Chemical formulæ are stated in the new notation. This is as it should be, inconvenient as it will appear to those of the older school. Those who have not followed the conflict of theories going on in later years must find it difficult to familiarize themselves with the new aspect under which old facts present themselves. For the younger generation, accustomed to view them in the light of the prevailing theories, the retention of the old formulas, the rationale of which to the majority could have none but historical interest, would have been a constant source of vexation.

In chemicals, under the head of tests, close attention has been given to the methods for the detection of impurities and estimation of adulterations. Under phosphoric acid we miss Hager's test for the detection of arsenic and phosphorous acid, which recommends itself by its readiness and simplicity.

In turning our attention to the articles connected with the chemistry of the alkaloids, we find a striking example of the success achieved in presenting comprehensive and often complicated subjects in a manner at once concise and exhaustive, and fully in accordance with the advanced state of science. In support of this we need only to point to the articles: Cinchona, with the latest methods for assay of the cinchona barks; opium, with its valuable contribution under the heading Morphiometry; or any of those treating of the various cinchona alkaloids. Of omissions we noticed but few. We miss quiniæ hydrobromas and quiniæ hypophosphis as articles not unfrequently prescribed. Considering that the completion of such a comprehensive compendium as this work has involved years of labor, and that the multitude of subjects within its compass had to be gathered from fields of unlimited extent, fields where new seeds are daily sown, bringing forth constantly new harvests of facts affecting the interests of pharmacy, it is only to be wondered at that the number of omissions to which a close criticism might point is so small.

The work closes with an appendix containing tables of weights and measures, tables showing the relation between apothecaries' weights and their equivalents in the metric system—this last subject having particular attention bestowed upon it—comparisons of scales of the different hydrometers, alcoholometers and thermometers; the list of leading reagents will be found of particular interest, as also as a new feature to the American pharmacist, the addition of volumetric test solutions expressed in the values of the metric system. A complete general index directs the student to 10,400 references. The therapeutical index will be regarded as a convenience to the practitioner.

As not belonging to our province, we have refrained from commencing upon all that in the work which is connected with therapeutics and pharmacodynamics, treated under the headings Physiological Action and Medical Uses, to which a fully equal share of the pages of the work is given, so as to render it of not less importance to the practitioner than to the pharmacist.

We congratulate the authors upon their success in having brought to a close a work which must inevitably take its place as one of the most important contributions to medical and pharmaceutical literature. The publishers have done full justice to the work in the material and typography of the book, which leave nothing to be desired.

CHAS. MOHR.

Mobile, Ala, April, 1879.

Chemistry, General, Medical and Pharmaceutical. including the Chemistry of the U. S. Pharmacopœia. A Manual of the General Principles of the Science, and their Applications in Medicine and Pharmacy. By John Attfield, M. A., Ph. D. Eighth edition. Revised by the Author. Philadelphia: Henry C. Lea. 1879. 12mo, pp. 697. Price, cloth $2.50, leather $3.00.

We have repeatedly expressed our favorable opinion of this work, and on the appearance of a new edition of it, little else remains for us to say, except that we expect this eighth edition to be as indispensable to us as the seventh and previous editions have been. While the general plan and arrangement has been adhered to, new matter has been added covering the observations made since the former edition. The present differs from the preceding one chiefly in these alterations, and in about ten pages of useful tables added in the appendix.

We observe that on page 395, where the preparation of resin of podophyllum is described, the author forgot to strike out the incorrect sentence, "No acid is ordered in U. S. P." On p. 419 the composition of jalap resin is not correctly stated. Mayer's *jalapin* was obtained from Ipomoea orizabensis, and the resin of scammony was pronounced identical with it by Keller. Kayser's rhodeoretin is Mayer's *convolvulin*, and obtained from true jalap, Ipomoea purga. That portion of crude jalap resin which is soluble in ether is stated by Kayser and Sandrode to be soluble in alkalies, from which solutions it *is* reprecipitated by acid; this resin connot therefore be identical with jalapin.

The following pamphlets have been received:

The Treatment of Genito-urinary Organs, etc. By J. J. Caldwell, M. D.

Twenty-sixth Annual Report of the Pennsylvania Training School for Feeble-minded Children, Media, Delaware county. 8vo, pp. 23.

Circular of Information Relating to the Pennsylvania Training School for Feeble-minded Children, 1879. 8vo, pp. 35.

An Address upon the Life and Character of Lunsford Pitts Yandell, M.D. By Rich. O. Cowling, A.M., M.D. 1879. vo. pp. 10.

Opium as a Tonic and Alterative, and Its Hypodermic Use, etc. By B. A. Pope M.D. vo. pp. 14.